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Original Articles

SOME GENERAL PRINCIPLES IN CONNECTION WITH PROTOZOA AS FACTORS IN DISEASE.*

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At the risk of repeating statements already well known, I propose to discuss certain general principles concerning protozoa, especially in connection with disease. Such a discussion is not entirely free from the risk of laying myself open to attack, but I believe that it is a good plan to return occasionally not only to general principles but also to elementary facts. If such a discussion provokes adverse criticism, either in public or in private, the criticism itself may accomplish some good and thus justify this paper.

We have heard a great deal during recent years about protozoa in relation to disease, and during the next twenty years we shall hear much more, for, quite aside from studying these animals as a cause of disease, we can, I believe, conservatively hope to find in their study valuable clues to solutions of many obscure problems in cytology of higher animals. This phase of protozoölogy is capable of playing as important a rôle in medicine as the subject of pathogenic protozoa is now playing in pathology, and I am fully persuaded that eventual practical results would more than justify the establishment of several university chairs of protozoölogy, with the distinct understanding that the incumbents should devote a not inconsiderable amount of their time to a purely abstract and academic study, without even permitting the question of the immediate practical application of their conclusions to arise in their minds. I believe thoroughly in applied protozoölogy, but I look for equally important ultimate results in academic protozoölogy, and I hope that the very just and perfectly natural utilitarian tendencies of our times will not inhibit the obtaining of further fundamental, but at present academic, principles which this group of animals seems to offer.

Now, if protozoa are of such importance, both academically and practically, as they seem to be, let us ask the question: From our present standpoint of knowledge, what are protozoa? This question may seem absurdly elementary, for we are prone to consider that the conception of such a common word as "protozoa" is thoroughly established.

For myself I am free to confess that the more I read and study on protozoa the less clearly am I able to form a systematic conception of what really are protozoa and what really are not protozoa. I will go even further and lay myself open to attack by making what may seem to physicians to be an unscientific admission, namely, that, while in numerous instances I feel capable of reasoning out that certain organisms are or are not protozoa, in numerous other cases I feel as much confidence in a conclusion based on my intuition as in a conclusion based on my reasoning. Fifteen years ago I would not have wished to make this admission, but the more experienced one becomes the less fear he has of admitting his ignorance, the limitations of his ability, and, above all, the important fact that it is very difficult, often impossible, to draw sharp boundaries in Nature.

Let us turn for a moment to the systematic conception of the protozoa.

Most of us would probably not object very strenuously to defining the protozoa briefly as unicellular animals. As a general proposition, this definition is more or less acceptable to me, with, however, the important mental reservation that zoölogists, the men who spend their lives studying animals, are unable to give a definite, concise, uncriticisable definition of an animal, and, further, that the term unicellular as applied to the protozoa is not absolutely free from criticism.

As a matter of curiosity, I have recently examined a number of standard books to see how various authors attempt to describe the protozoa systematically. The study was interesting, but the results could be more or less clearly foreseen.

Several prominent authors speak of the protozoa in a way which might leave the unguarded reader under the impression that these organisms represent a distinctly defined group of animals. Prominent among the characters attributed to the group are the following:

1. A unicellular structure, with one or several nuclei.
2. If several cells unite to form a colony, these cells still preserve their independent nature.
3. Tissues and organs are absent, in the sense that tissues are structures composed of similar cells similarly united, and organs are combinations of tissues, for specific functions; but a quasi-tissue differentiation is more or less admitted for the protozoa, and organellæ are distinctly admitted.
4. The usually microscopic size, with numerous exceptions.
5. Simplicity of structure, the word simplicity being more or less qualified.
6. Non-sexual reproduction by division, budding and spore formation, and often sexual reproduction.
7. Habitat in water or in a moist medium.

It is no secret to zoölogists that these characters, singly or in combination, are not sufficient to enable us to determine definitely, in all cases, whether a given organism is or is not a protozoön, and we should recall that when authors speak of the protozoa in the manner indicated they are doing so with more or less pedagogic license, in order not to plunge the beginner into uncertainty and confusion.

* Introductory address in a Symposium held before Section K, American Association for the Advancement of Science, New York, Dec. 27, 1906.

Turning from the class of works just referred to, and consulting the more philosophical and less didactic essays, the fact stands out very prominently that certain authors (Cobbold,[1] 1879; Doflein,[2] 1903; Leuckart,[3] 1879; Ward,[4] 1894) frankly admit their utter inability to give a concise and definite systematic definition of protozoa, while many other authors avoid the question by omitting a definition and confining their remarks to a general discussion.

There is nothing new or startling in what has just been said. These facts are known to every professional zoölogist and to many physicians. But I have a distinct object in bringing this matter to your attention to-day, namely: In our numerous discussions as to whether the causative agent of this or that disease is an animal or a plant parasite, let us recall that zoölogists may have a legitimate difference of opinion on certain cases, because of the fact that in the present state of zoölogical knowledge cases may come to our attention in connection with which it is impossible for us to eliminate completely the subjective element and to give an absolutely objective opinion. If now conditions are such that professional zoölogists may hold different opinions on a given case, without any implication that we are unreasonable or in our dotage, is it strange that physicians and pathologists, to whom zoölogy is a side issue, should differ in their interpretations?

To my mind, the natural conclusion is that two men may differ in opinion as to whether *Treponema, Plasmodiophora, Cercomonas, Lamblia,* etc., are animals or plants, and yet they do not thereby forfeit all rights to retain their systematic position as members of the species *Homo sapiens*. Let us expect in the future to meet wide differences of opinion in such cases, and let us accept these differences as having a certain amount of fundamental right to existence.

Admitting, now, the inability of zoölogy to concisely define the *Protozoa*, let us glance for a moment at certain conclusions which authors have reached regarding systematic limits of certain groups of *Protozoa*.

Several years ago zoölogy had a satisfactory classification for the *Protozoa*. We recognized the *Ciliata*, the *Flagellata*, the *Sporozoa*, the *Rhizopoda*, etc. To-day the limits and relations of these groups are by no means so distinct as formerly supposed. Some eminent botanists claim the flagellates, and two of the most prominent zoölogists were, until they died a few years ago, firm believers in the view that the zoölogists had as much right to the bacteria as did the botanists. In view of the recent results in the flagellates and sporozoa, showing that in neither group is the organization so simple as was formerly supposed, the limits of these two groups —once assumed to be so sharply defined—are now more or less confused, and I doubt whether even Calkins, whom I view not only as one of our leading living American authorities on protozoa, but also as one of the foremost protozoölogists America has ever produced, would care to go under oath as to whether certain forms are flagellates or sporozoa.

The second point which I wish to make, therefore, is that, for some years to come, we must expect to meet with a considerable legitimate difference of opinion among authors as to the exact systematic position of certain organisms, even when it may be generally admitted that they are protozoal rather than protophytic.

In what do these confusing conditions find their natural explanation? To my mind, the explanation is, to no little extent, historical. Up to a few years ago, or, at most, a few decades ago, the protozoa were very interesting little creatures which a zoölogist felt justified in studying provided he had nothing better on hand, or provided he became especially interested in them academically and was fortunate enough to be in a position to study them. Under these circumstances, it is not strange that the classification used to-day is not altogether satisfactory. Then the technic improved, and our friends, the pathologists, began to discover zoölogical principles which the zoölogists had overlooked, and now zoölogists are being forced to a more careful study of the protozoa. Let us not forget that we owe the impetus for this study chiefly to medical men like Lœsch, Laveran, Theobald Smith, MacCallum, Councilman and others. Had these men never pointed out the practical importance of the protozoa, it seems an open question whether zoölogy could now boast of a Thelohan, a Mesnil, a Nuttall, a Schaudinn or a Grassi as eminent students of protozoa. This statement is made, of course, without any reflection on the greatness of Balbiani, Buetschli, Stein, Schneider and other recognized protozoölogists who have studied the subject chiefly from more academic points of view.

Again, in studying any animal, the biology of which is not known to us, we naturally and very properly try to foresee theoretically what the life history probably will be. In this we reason on analogy. Such reasoning is thoroughly justified and is frequently confirmed by practical study. In this speculative forecast, our reasoning is based chiefly on known facts and known principles rather than on facts and principles as yet unrecognized. Further, terms are used with the conceptions attached to them at the time the forecast is made. These theoretical forecasts are subject, however, to two important modifications as time goes on, namely: First, to a change in the conception of systematic units, due to additional knowledge of taxonomic nature, and, second, to additional facts of a more strictly biologic character.

To take a specific example: Calkins has published a speculative life cycle for the alleged parasite of smallpox. There are certain points in his speculative cycle which have support in analogy; hence they are easily grasped; other points seem to be rather contrary to analogy. The fact, however, that you or I may have our misgivings as to whether the alleged parasite of smallpox may not possibly be the product of a parasite, rather than the parasite itself, and the fact that certain points advanced are difficult for us to grasp should not blind us to the possibility that, after all, the real fundamental difference between those who support the theory of a smallpox parasite, and those of us who have our misgivings regarding it, may perhaps simply be that the former are from 5 to 25 years ahead of us in taxonomic and biologic conceptions. By no means has the last word been said on the possible protozoan etiology of smallpox. The existence of a difference of opinion at present, however, is not unjustified; on the contrary, it is fortunate, for this very difference of opinion is bound to be one of the most important factors in bringing out the truth: further, it has its basis in truth, namely, in the fact that our present knowledge of the protozoa is so incomplete that such differences are inevitable.

1. Cobbold: Parasites: A Treatise on the Entozoa of Man and Animals, 1879, p. 7.

2. Doflein, F., and Prowazek, S. von: Die pathogenen Protozoën (mit Ausnahme der Hämosporidien) Handb. d. path. Mikro-organismen, Jena, 1903, vol. I, pp. 865-1006, figs. 1-81.

3. Leuckart: Die Parasiten des Menschen, 1879.

4. Ward, Henry B.: Protozoa, Wood's Ref. Handbook of Medicine and Science, August, 1904, vol. viii, pp. 527-549.

Considering now the *Protozoa* as an ill-defined group of unicellular animal or animal-like organisms, and admitting the present complexity and confusion of the subject, let us turn to certain general rules in reference to their relation to certain diseases.

In May, 1901, in harmony with the trend of the thought of that year, I formulated two general rules with reference to parasites and disease. My original formulation was as follows:

> We may lay down two general biologic rules, which, I believe, are enunciated to-night for the first time: The first rule, to which at present a few exceptions are known, is that diseases which are accidentally spread by insects are caused by parasitic plants, particularly by bacteria. The second, to which no exceptions are as yet known, is that those diseases which are dependent on insects or other arthropods for their dissemination and transmission are caused by parasitic animals, particularly by sporozoa and worms.

The difference between the accidental (or, better, the facultative) carrier and the obligatory carrier may be well brought out if we call the first method of dissemination a mechanical transmission and the second method a biologic transmission. The first does not assume or imply that the transmitted germ necessarily undergoes any evolutionary stages in the arthropod (as, for instance, in the case of the bacillus of typhoid, or the egg of an ascaris or of a tenia in or on the housefly), while the second does imply that the intermediate host is necessary for the normal completion of the life cycle of the organism in question (as, for instance, the mosquito for the malaria parasite, or certain insects for certain tapeworms, nematodes and thorn-headed worms).

Novy and Knapp,[5] in their superb paper on *Spirillum obermeieri*, state that:

> Hitherto it has been assumed that insect transmission indicates a protozoal organism, and in so far as the spirochetes are concerned, the chief evidence which can be now adduced in support of their animal nature is the fact of such transmission in the case of *Spirillum duttoni* and *Spirillum gallinarum*. The persistence of the spirochetes in such insects for months, and the infection of their eggs constitute the remaining argument in support of this view.

This passage has produced, in the minds of several persons with whom I have discussed it, the impression that the biologic rules just quoted have been overthrown.

I would point out, however, that the hereditary transmission of a germ, by the female through the egg to her young, can not be accepted as an argument for the protozoan nature of a given organism, for, unless certain published (1904) observations are shown to be erroneously interpreted, plant parasites can be transmitted in this manner.

Further, it should be noticed that Novy and Knapp immediately add (contrary to the conclusions of Dutton and Todd,[6] 1905):

> There is as yet absolutely no evidence that the spirochetes (i. e., spirilla from their point of view) actually multiply in these insects, much less any indication of the existence of a life cycle in any way comparable to that of the malarial organism.

This last sentence is of great importance, for until it is shown that *Spirillum duttoni* and *Spirillum gallinarum* do undergo some necessary biologic changes in ticks it remains undemonstrated that the diseases caused by these germs are dependent biologically on ticks, and, if not dependent on ticks for their transmission, then the ticks are mechanical, not biologic, transmitters.

Certain forms of trypanosomiasis, for the sake of argument, may be admitted as commonly transmitted by certain insects; in certain forms of trypanosomiasis (as surra) it is not only theoretically conceivable, but the point is even claimed by some authors that birds can carry the disease; it is also perfectly reasonable theoretically, and this point appears to be well supported by published facts, that surra can be transmitted through wounds obtained in eating surra animals; it seems also theoretically possible that surra, like dourine, might be transmitted accidentally by coitus. All these possibilities go to show that surra is not yet proved to be biologically dependent on insects for its transmission, and this disease, though caused by an organism which is usually recognized as a protozoön, can not, therefore, be legitimately cited as disproving the biologic rules quoted. The possibilities of transmitting malaria by birds, by ingestion, and by coitus, is unknown and undreamed of; so far as we know or can reason, the life cycle of the malarial organism, hence also the existence of the disease in nature, like the life cycle of infection with *Dipylidium caninum, Filaria bancrofti, Gigantorhynchus gigas*, etc., are absolutely dependent on insects, hence malaria comes within the second biologic rule.

Are African tick fever and Rocky Mountain spotted fever of man and spirillosis of chickens valid exceptions to the second rule?

At present we can hardly argue conclusively on Rocky Mountain spotted fever in this respect, but it is to be hoped that the brilliant results obtained by Ricketts[7] and by King this past year will be continued next year and give us further definite facts as to whether the transmission by ticks in that case is mechanical or biologic, and it is also to be hoped that they may be able to succeed, where I failed, in definitely finding a culpable parasite.

As for African tick fever of man and American spirillosis of chickens, I am more than impressed with the brilliant work by Novy and Knapp, in which they argue that the parasites are plants rather than animals. At the same time, as they themselves emphasize, no necessary biologic stages of these parasites have been found in the ticks; hence I must submit that the possibility is as yet by no means excluded that these two diseases are not depndent on the ticks for their transmission. Who can say to-day that these diseases may not, like surra, be wound diseases, namely, transmissible through a wound made by almost any method which would at the same time contaminate the wound with infected blood? I am not yet, therefore, in a position to admit that an exception has been proved to the second biologic rule, and much less am I in a position to admit that the rule has been overthrown. I would not, of course, go to the extreme of claiming that no exceptions will ever be known, for our conceptions of animals and plants may change, and our knowledge of the protophytes is not yet complete. I do maintain, however, that the second rule holds to-day as well as it did in 1901, for no exception has yet been proved.

In connection with the interesting experiments of Dutton and Todd[6] it is pertinent to call attention to the fact that, while they have definitely proved certain points, other points brought out, although indicative of certain interpretations, call for further study under less

5. Novy and Knapp: Studies on *Spirillum obermeieri* and Related Organisms, Jour. Infect. Diseases, May, 1906, vol. iii, pp. 291-393.

6. Dutton and Todd: The Nature of Human Tick Fever, Liverpool School of Tropical Medicine, Memoir 17, 1905, pp. 9-12.

7. Ricketts: THE JOURNAL A. M. A., July 7, 1906, p. 33; Aug. 4, 1906, p. 358; Oct. 6, 1906, p. 1067.

complicating conditions than those which they describe.

On analyzing their experiments, it seems to me that they have established the following points:

1. In tick fever a certain blood parasite is found which they interpret as probably identical with *Spirochæta obermeieri*. [But which has since been described by Novy and Knapp[5] as a distinct form, *Spirillum duttoni*.]

2. This parasite and this disease can be transmitted by inoculating blood from diseased animals into susceptible healthy animals.

3. This parasite and the disease can be transmitted to healthy susceptible animals by allowing the latter to be bitten by ticks collected from native houses, but not fed experimentally on diseased animals; accordingly, in Nature ticks can transmit the disease.

4. Ticks caught in native houses (but apparently not tested for infectivity), when fed on sick animals which had been experimentally inoculated with infected blood, were able six days later to transmit the disease to healthy susceptible animals.

[In this case it is not proved whether the infectivity of the tick dated from their feeding on the sick animal or whether they were infective when first caught; hence, a definite period of incubation in the tick can not be assumed from this experiment.]

5. Five days after animals have been inoculated by tick bite the parasites may be found in the blood.

6. Infectious ticks, collected in native houses, may remain infectious for at least 29 days after being collected.

7. An experiment to transmit the disease through unbroken skin, by placing on it blood containing parasites, was negative.

8. Dust and dirt from cages containing infected ticks did not transmit the disease through the abraded skin. (Observations covered 14 days. Experiments with blood on the abraded skin do not appear to have been made.)

9. So far as can be judged from the data published, tick fever can be hereditary in the tick from mother to young. [This does not, however, necessarily imply either a biologic cycle of the parasite or its animal nature.]

The following points seem to me to be indicated, but not proved yet; further study and experiments in these lines are necessary:

1. That tick fever can be acquired as a "wound disease," namely, by bringing infective blood into contact with abraded skin (Dutton's[4] infection).

2. That an infectious tick is not necessarily infectious at all times. (If infective only at intervals, this point would seem to support the contention that the parasite is protophytic rather than protozoal.)

Whatever any later experiments may show, and without prejudice to such results, the following points do not seem to me to have been established as yet:

1. That there is any minimum period of incubation in a tick experimentally inoculated, before this tick is able to transmit the disease.

2. That there is any necessary portion of a definite life cycle dependent on a passage of the parasite through the tick, hence this disease has not been demonstrated as biologically dependent on the tick.

Finally, it may be remarked:

1. The maximum period of incubation in mammals is not yet established, hence great conservatism must govern the interpretation of certain of the experiments.

2. The maximum period of infectivity of ticks is not yet established.

3. No experiments seem to have been made to determine whether or not infection may take place through food soiled by feces from infected animals.

Summarizing, without prejudice to results any later experiments may show, the point is not yet established that tick fever, though transmissible by ticks, is biologically dependent on ticks for its transmission.

In connection with the spirillosis of chickens, Marchoux and Salimbeni[8] have shown that this disease can be transmitted by ticks (*Argas miniatus*); but they have also shown that it is transmissible through ingestion of fresh feces, for their experiment animal No. 8, which was fed on fresh dejecta of a sick fowl, took the disease in 5 days. This latter experiment goes to show that the parasite in question (*Spirillum gallinarum*) is not dependent biologically on *Argas miniatus* for its life cycle; hence that it does not form an exception to the second rule under consideration.

In regard to a possible necessary period of incubation in the tick, the only reference I have been able to find is a statement by Marchoux and Simond[9] that:

Argas miniatus, intermediate host of the spirillum of fowls, infects itself, like *Stegomyia fasciata*, by biting a sick individual. *Argas miniatus* (like the stegomyia) does not manifest infectious power until after a lapse of a definite time.

The premises of this conclusion are unknown to me; hence I can not judge it fairly; but nowhere in the literature have I as yet been able to find experiments which support it. Whatever the premises may be, the fact remains that, according to published experiments, the disease is also transmissible through the feces.

Turning now to yellow fever: In May, 1901, shortly after Reed, Carroll, and Agramonte published their epoch-making experiments, I said in the address from which I quoted above:

The fact that yellow fever is transmitted by the bite of the mosquito not until a considerable time—namely, 12 days after the insect has sucked blood—indicates very strongly that yellow fever is caused, not by a bacterium, but by a sporozoön. (I was, of course, using the term sporozoön in its 1901 conception.) If this latter supposition can be demonstrated, then the conclusion will, from analogy, be warranted that mosquitoes, and probably only mosquitoes, can transmit this disease. If, on the other hand, the disease should be proved to be bacterial in nature, analogy would not at present (in 1901) warrant us in concluding that mosquitoes are either necessary to its transmission or that they are the only transmitters.

In 1904 Schaudinn suggested that possibly the parasite of yellow fever would eventually prove to be a spirochete. Arguing on his premises regarding the life cycle of spirochetes, this suggestion seemed to be a valuable one, but Novy's work appears to me to have weakened it somewhat.

Later Novy and Knapp[5] state:

Transmission of spirillar diseases by insects, and the congenital infection of mammals and eggs of insects are properties which up to the present have been regarded as characteristic of protozoa. These properties are now known for the first time to be shared by this group of bacteria. Yellow fever presents a marked analogy to the spirillar infections and it is not improbable that the cause of this disease will be found to belong to this group of organisms.

Again (on pages 302-303) they say:

The fact alluded to above finds a remarkable parallel in the causative agent of yellow fever, which likewise disappears from the blood in about two days. It goes to show that this unknown organism may be related to the spirochetes (namely, *Spirilla*, from their point of view), and as such, may belong, not to the protozoa, as is generally accepted, but to the bacteria.

Every suggestion and every analogy which can possibly be brought forward in connection with yellow fever is to be welcomed, and the suggestions just quoted are, therefore, more than justified. At the same time it may be pointed out that this suggestion, which, of course,

8. Marchoux and Salimbeni: La spirillose des poules., Ann. de l'Inst. Pasteur, September, 1903, vol. xvii, pp. 569-580.

9. Marchoux and Simond: Etudes sur la fievre jaune. Ann. l'Inst. Pasteur, January, 1906, vol. xx, pp. 16-40.

may prove to be correct, is somewhat contraindicated by certain facts, namely, by the long period of incubation in the mosquito.

Let us speculate on the life cycle of the parasite of yellow fever so far as reasonable biologic analogy would seem to justify us at present:

Note, first of all, that the incubation of the disease in man is very short when compared with its incubation in the mosquito; hence this fact seems to call for a parasite with very rapid reproduction. Note, further, that the non-sexual reproduction, both of bacteria and of protozoa, is potentially in geometrical progression; hence the assumption, or at least the consideration, of this non-sexual reproduction during the incubation of the disease in man seems justified. Assume, for instance, that each separate organism introduced by the mosquito gives rise to 100, to 1,000, or to 10,000 organisms within a few hours; follow this up in geometrical progression. Would not such a hypothetical case be in harmony with the short incubation in man? Note, however, the important fact that in the hypothesis, up to this point, either bacteria or protozoa could present the required conditions. The fact that the organisms in question disappear early from the blood does not seem to me to be a very strong point either for or against either the bacterial or the protozoan nature of the parasite.

Passing now to the mosquito, note, first of all, the relatively long period of incubation, of about 12 days. This must have some significance.

Let us first assume, for the sake of argument, that yellow fever is caused by a spirillum, namely, from the standpoint of Novy and Knapp, by one of the bacteria. When a mosquito bites a yellow-fever patient in the early stage of the disease she drinks in these bacteria with the blood; according to present conceptions, this blood first passes to the diverticula of the esophagus and later to the stomach; the point is clear that the diverticula have become infected with the yellow fever parasite. The probabilities that all the bacteria would leave the diverticula with the blood and pass to the stomach, leaving the diverticula yellow fever sterile, seem very, very, remote; on the contrary, the probabilities seem very great that some of these bacteria would remain in the diverticula.

The most recent conception of the process of biting on the part of mosquitoes is that after piercing the skin with their mouth parts they eject the contents of the diverticula into the wound. This conception seems to be based on rather good experimental evidence interpreted by a good observer (Schaudinn). If this conception is correct, it would appear reasonable to suppose that if the mosquito bites a non-immune at any time from 2 to 11 days after she has become infected from a yellow fever patient she would vomit some of the yellow fever bacteria from her esophageal diverticula into the person bitten and that this person would contract yellow fever. This conclusion is not, however, in harmony with the 12-day period of incubation in the mosquito and would appear to indicate an error in the assumption that the parasite is a bacterium.

If, however, it is assumed that the parasite of yellow fever undergoes part of its life cycle in the mosquito, the changes in question would naturally begin very shortly after the organisms gained access to the mosquito, and under such supposition they would probably not result in yellow fever even if vomited from the esophageal diverticula into a non-immune, because their life cycle in the mosquito has not been completed.

Novy and Knapp[5] have insisted that we have as yet absolutely no evidence that *Spirillum duttoni* and *Spirillum gallinarum* do undergo any necessary cycle, or even a multiplication in ticks, and at least the first part of this claim seems well founded. Have we not, on the other hand, a certain amount of indirect evidence in the 12-day incubation period that the yellow fever parasite does undergo part of its normal life cycle in the mosquito?

Since we have at present no analogy of such obligatory alternate cycles among the bacteria, and since we have good analogies for such cycles among the protozoa, does not this obligatory period of incubation seem, in our present state of knowledge, and, of course, without prejudice to any unknown cycles in bacteria, to indicate that the parasite in question is of protozoal rather than of protophytic nature?

So far as our present knowledge of unicellular organisms goes, I believe that to-day, as in 1901, the indications are that yellow fever is caused by a protozoön, but I am in doubt as to its exact systematic position, namely, whether it is a sporozoön or a flagellate. If, however, double life cycles can be proved for any of the bacteria, then the present data regarding yellow fever will be equally applicable to the view that the disease is caused by some sort of a bacterium.

What, now, is the meaning of the double life cycle, the alternation of sexual and non-sexual reproduction?

Years ago academic protozoölogy showed that in certain protozoa the non-sexual reproduction is limited in extent and is rapid, while the sexual reproduction may be still more limited in extent and is slower in comparison.

Just why this limitation exists, whether the non-sexual reproduction is brought to an end because of the animals' becoming exhausted, from a reproductory standpoint (perhaps an internal cause), or because of unfavorable surroundings (an external cause), or from a combination of both, can not be discussed here, fundamental as the question is. Suffice it to say that the non-sexual reproduction in many unicellular animals is limited in extent. It is fortunate for us that this is so, for were it not, every untreated case of malaria would necessarily be fatal, since the organisms in man increase (potentially) in geometrical progression. Note the important point, however, that in malaria, caused by a parasitic protozoön, this non-sexual reproduction is rapid while it lasts, but that it is limited in extent by some factors not altogether clear at present.

The exact causes of this limitation of non-sexual reproduction among the protozoa calls for extensive academic study, but the results of such study will be of far-reaching practical importance.

CHRONIC GASTRITIS.*

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Probably no term employed in the nomenclature of gastric diseases has been more misused than that of chronic gastritis. The disease has been and still is considered by some physicians a very common affection, yet Riegel says: "Chronic catarrh of the stomach is not a frequent disease. If we cease to force all known gastric

* Read in part at a meeting of the Norfolk District of the Massachusetts Medical Society.

disorders into a few disease categories, and rely only on positive signs of this condition, we shall soon learn that chronic gastritis is not so frequent as older physicians thought and as many modern ones still persist in believing." Stockton[1] says that "the comparative infrequency of chronic gastritis will be endorsed by experience if the cases are carefully studied." In my experience, primary chronic gastritis is encountered once in about every 300-400 adult patients in a general medical clinic, not so often as gastric cancer or gastric ulcer. Of 100 consecutive cases of gastric disorders, taken from my private records in which the stomach contents were examined, 9 presented the objective findings of chronic gastritis. This percentage (9 per cent.) of gastritis cases is greater than I had expected to find, but it should be stated that more than one-half of the number from which these were taken were cases referred by physicians and represent unusually severe types of gastric affections.

With the general practitioner the percentage of such cases is probably somewhat larger than is met in a clinic, for the reason that he does not see so many patients with trivial ills. Yet, however we approach the subject, it will be found that the percentage of cases of primary chronic gastritis is comparatively small.

DEFINITION OF CHRONIC GASTRITIS.

Because the above statements will seem surprising, perhaps incredible to some, let us come to an understanding of what is meant by chronic gastritis, and how the condition may be recognized. Briefly, then, chronic gastritis means a chronic inflammation of the gastric mucosa, an organic affection characterized by certain pathologic changes. This condition produces certain alterations in the gastric secretion, usually a diminution of the acidity, with more or less impairment of the ferments pepsin and rennin, and there is usually an excessive secretion of mucus. The degree of alteration of the secretion depends on the extent and severity of the inflammatory process. Now, by certain well-known tests we are enabled to detect the changes occurring in the secretions, and it is on these objective findings that we base our diagnosis. It was the custom in the past to base the diagnosis of this condition on the subjective symptoms of the patients. This older method has frequently resulted in the diagnosis of chronic gastritis in cases which have been proved to be cancer, ulcer, neuroses and other gastric conditions.

Herein lies the explanation for the prevalence of the different opinions regarding the occurrence of this disease. The original purpose of this paper was to consider the occurrence and etiology of gastritis, but since so little has been written on this subject, as compared to other features of digestive diseases, a further discussion of the disease may not be out of place, and the 9 cases referred to will help to present some points I desire to make.

DURATION.

In chronic gastritis the duration of the condition is known to be considerable. The average duration in the 9 cases exceeded six years, the shortest being over one year and the longest over twenty years from the beginning of symptoms.

SEX AND AGE.

The disease is more common in men than in women. These cases reported occurred in patients between the ages of 20 and 50 years. Ewald[2] considers that a large number of patients who are said to die of old age, really perish from gastric atrophy, but states that this is not generally recognized, since the symptoms are as yet not well known and because the microscopic changes in the stomach are not marked. Of the few elderly patients in whom I have suspected this condition, I have usually been surprised to find no evidence of it.

ETIOLOGY.

So many factors enter into the etiology of the disease that it is often difficult or impossible to attribute the condition to any single cause. The use of alcohol is considered by many as the most common cause, and it seems probable that this agent, by its direct action either on the gastric mucosa, or the liver and other organs, may cause primary or secondary chronic gastritis. The majority of my patients with gastritis have not used alcoholic liquors to excess, and many have not used them at all.

WEIGHT.

It is the popular opinion that patients with gastritis are usually emaciated or show considerable loss of weight. Strumpell[3] speaks of it, and Ewald says: "Emaciation soon occurs, and losses of from 30 to 60 pounds may often occur in a few weeks." On the other hand, Einhorn[4] states that "although there are exceptions to this rule, the general appearance is good, the patient looks well nourished and usually possesses a good panniculus adiposus."

Of the 9 cases cited (with an average duration exceeding six years) three patients had lost less than 5 pounds, and but one more than 10 pounds; my general experience coincides with Einhorn's.

OTHER SYMPTOMS.

Appetite.—This is generally considered as diminished, although most writers mention exceptions to the rule. I find that only one patient complained of poor appetite, four considered their appetites good, and four that their appetites varied from excessive to voracious. With good appetites and fairly good vicarious digestion by the intestines there is but little reason for much loss of weight.

Pain.—In only 2 of the 9 cases was pain complained of. In 1 of these cases it occurred from one to two hours after eating and was relieved by eating again. This case has been referred to in another article,[5] and is one of several of this kind which I have observed. Boas[6] refers to this peculiar type of pain in chronic gastritis, and remarks that "it has exactly the same character as the pain in hyperchlorhydria," with which statement I quite agree. Pain as a rule, however, is the exception.

Bowels.—Constipation occurred in 4 cases, while in 5 the bowels were regular. Constipation is considered the rule. Distress or discomfort (not pain) after meals occurred in 5 cases. This I find is a fairly common symptom. Excessive flatulence occurred in 3 cases, and was usually an annoying and obstinate symptom to overcome. Eructation of gas, with or without regurgitation, also occurred in 3 cases, as did also nausea and vomiting, which was soon relieved by treatment.

Thus it is seen that no one symptom, nor any particular group of symptoms is characteristic of gastritis;

1. Diseases of the Stomach, 1903: Nothnagel's Ency. of Practical Medicine.

2. Ewald: Diseases of the Stomach, Amer. Edition.
3. Textbook of Medicine.
4. Einhorn: Diseases of the Stomach.
5. Chase: Boston Med. and Surg. Jour., Sept. 14, 1905.
6. Therap. d. Gegenwart, Berlin, xlvi, No. 1.

moreover, any symptom, or almost any group of symptoms, here mentioned may result from a neurosis, or an organic disease other than gastritis. It should be borne in mind that purely nervous symptoms may occur in cases of gastritis.

DIAGNOSIS.

The diagnosis must be based on the objective findings obtained from examination of the gastric contents; yet it is rarely safe to make a positive diagnosis from a single examination. I shall not enter into the details of diagnosis; they may be found in any recent work on diseases of the stomach.

In these 9 cases, free HCl was absent on repeated examinations, and combined HCl was, as a rule, diminished, with a corresponding reduction in total acidity. Mucus was present in excessive amounts in 7 of the 9 cases. Except in 3 cases of slight stasis, the amount of contents one hour after an Ewald test breakfast was always diminished, and in the majority of patients no contents could be obtained at the expiration of this period. "Acid gastritis" and secondary gastritis are not considered here.

Differential Diagnosis.—Nervous achlorhydria, some cases of cancer of the stomach and achylia gastrica are the conditions with which gastritis is most often confused when considering the gastric contents. Cases of transient achlorhydria are easily distinguished by observation, as the secretion soon returns in full strength, whereas the return of the secretion in chronic gastritis is always gradual and rarely or never appears in normal amount. Cancer is soon distinguished after observation by the continued loss of weight and the certain downward progress of the patient. The chemical findings of achylia gastrica can not be distinguished from those of atrophic gastritis, from which condition the achylia may and usually does result, although we occasionally see a case, one of which I have briefly reported,[7] in which it is difficult to conceive of a pre-existing gastritis, since there are no symptoms.

COMPLICATIONS.

A slight degree of stasis or motor insufficiency was observed in 3 of these 9 cases; it was soon overcome by treatment. I believe that marked degrees of stasis or atony rarely occur in uncomplicated cases of gastritis.

Hypermotility or pyloric insufficiency occurred in six of the patients, as indicated by the absence of gastric contents one hour after an Ewald test breakfast. In so far as I know, it has never been positively determined whether this premature expulsion of contents results from hypermotility, or from an insufficient pylorus. A factor to be considered in this condition is the fact that the diminished secretion naturally causes a diminution in the amount of contents. Whatever the condition may result from I have found it a difficult or impossible one to overcome, although in some cases in which the secretion has been restored, more gastric contents have been obtainable at later periods after the test meal than at the beginning of treatment. Some observers look on this condition merely as a compensatory one, whereby the chyme is hurried into the intestines where the greater part of digestion occurs. If viewed in this light it is not a condition to be overcome.

PROGNOSIS.

Riegel says: "Mild degrees of gastritis may be cured and frequently are cured. If severe degrees of atony have developed the prognosis is less favorable." According to Ewald, "the prognosis of this disease should not be considered too slightingly, especially as in prolonged cases of atrophy, an incurable and fatal lesion may be developed. Even in apparently cured cases the organ is left in such a sensitive condition that the slightest irritation or deviation from a specified diet may cause a fresh attack."

I believe that practically all patients with gastritis may be relieved of their subjective symptoms. Even in cases of achylia with gastric atrophy such results are often obtained, and these patients are seen to follow their occupations, to eat almost any kind of food with little or no discomfort, and to maintain their standard weight. In a large percentage of the simple and mucous forms of gastritis, the subjective symptoms are not only overcome, but the free HCl (which may have been absent for months or years judging from the duration of the symptoms) may be restored, at least in part. Such results may certainly be considered as cures.

It would seem that relapses are liable to occur in this disease, yet I have encountered only an occasional case, and in each, gross indiscretion in diet or the excessive use of liquor seemed the probable cause. During treatment most patients learn a valuable lesson in dietetics and profit thereby. For this reason I feel that they may be less liable to a recurrence than many individuals, who daily abuse their stomachs, are to the disease. The nine patients cited were treated from one month to several months. In every case the subjective symptoms were relieved or entirely overcome within a few weeks.

In 6 of the 9 cases free HCl was restored in amounts from .2-.5 of one part per 1,000 or .02-.05 of 1 per cent. The return of the HCl was always a gradual process, at first merely a trace appeared and later amounts sufficient to titrate. The earliest return of HCl in any case was after eleven days' treatment, while the longest time required for its appearance was seven months of irregular treatment. The average time of total treatment was about three months.

The results of treatment in those cases in which HCl was not restored seemed quite as satisfactory as in those in which it returned, in so far as relief from symptoms was concerned. At the time of discharge all these patients were partaking of a plain, wholesome diet. During the period of from twelve to nineteen months since their discharge, six of these patients have reported no recurrence of symptoms, and in 5 of the cases in which the HCl was restored it is still present. Three cases have not been followed.

It may be argued that these cases were unusually mild ones (the average duration was six years), yet I consider them fairly representative of the class of gastritis cases usually encountered. The question may arise, how long after the disappearance of subjective symptoms is one justified in treating a case in an attempt to restore the secretion? It may be said generally that the stronger or the richer the secretion the greater the possibility of restoring it to normal.

The strength of a secretion is best ascertained by the result of the quantitative test of its rennin or rennin zymogen. Boas[8] and Bourvere[9] have determined that normally rennin zymogen, after the addition of calcium chlorid, will coagulate milk with a dilution of 1 part secretion to from 150 to 160 parts water. Hence, the

7. Philadelphia Med. Jour., June 14, 1902.

8. Deutsch. Med. Wochschr., No. 17, 1892.

9. Gaz. Méd. de Paris, No. 22, 1893.

greater the dilution of a secretion, and a positive result from this test, the stronger it is. The above-mentioned writers have further decided that "a secretion which will not coagulate milk, after a 1-25 dilution, indicates a condition of advanced atrophy, in which there is but little probability that the gastric secretion can be restored." Usually the free HCl returns, if at all, within a few weeks.

One of the objects of treatment is to restore the secretion as nearly as possible to its normal strength, consequently so long as examinations from time to time show an increase in the amount of HCl, treatment should be continued. I have found, however, that after the free HCl has reached the strength of about 0.5 of 1 part per 1,000, or .05 of 1 per cent., continued treatment fails to effect a further increase. I have never seen or heard this point discussed, therefore I do not know if mine has been a common experience with others.

TREATMENT.

The object of treatment is to overcome the inflammation and if possible to restore the secretion and the impaired motor power of the stomach. Since any single cause of the inflammation is rarely discoverable, we must remove all conditions which may be considered as contributing factors. Hence, good hygiene is advised, which means regular habits as to eating, exercise and action of the bowels, repair of carious teeth, etc.

Diet.—In this condition starches are better digested in the stomach than under normal conditions, while proteids are but poorly cared for here, being digested almost entirely in the intestines. Bearing this point in mind and remembering that all mechanical, chemical and thermal irritants are to be avoided, we have the key to dietetics in this disease.

The articles of food to be allowed I check from a printed diet list, usually advising three meals a day, with one or two lunches if desired. Of the more restricted diet in the beginning of treatment, patients will rarely eat too much, while if the scales show a maintenance or increase of weight, I feel that they are eating enough, regardless of the number of calories which the food represents. Cooked fats I have found are not usually well borne. No alcoholic liquors are allowed; my reasons for prohibiting them are given elsewhere.[10]

Mechanical Means.—To free the stomach of mucus and to stimulate secretion and peristalsis, douching of the stomach internally with a warm alkaline and saline solution, is, I believe, the most valuable means we possess. For this purpose I employ my stomach apparatus,[11] using the Rosenheim tube. The solution is injected with the amount of force desired, but it is always greater than that obtained by ordinary lavage. By the douche I believe that adherent mucus is more thoroughly removed than by simple lavage, while the stimulating action of the small forceful streams must be far greater than that produced by pouring water into a tube which has but one or two large eyes. In fact, I feel that douching of the stomach in gastritis and other conditions will become a more popular means of treatment when its technic and results are better known.

Riegel agrees that "the internal douche may frequently be employed with profit in chronic gastritis. It may be useful under certain conditions to force the fluid into the stomach under pressure." Douching or lavage should be done at least twice a week and always with the fasting stomach. The agents which I usually employ are sodium chlorid and sodium bicarbonate 30 grains of each to a pint of water at 100 F. "Washing out" the stomach with copious draughts of medicated water seems but a poor substitute for douching.

Drugs.—For the purpose of dissolving mucus and increasing the secretion I use from 10 to 15 grains each of sodium chlorid and sodium bicarbonate in a glass of warm water, to be taken about fifteen minutes before meals. Some of the saline mineral waters may serve the same purpose in a measure, so also may some of the more elegant preparations containing the various salts. The phosphate or sulphate of sodium may be used, especially if there is constipation; nux vomica, condurango and other bitter tonics may be of service, but of late I have rarely used them.

I have elsewhere expressed my views regarding the use of hydrochloric acid[12] and pepsin.[13] I believe that the large doses of from 15 to 20 minims of HCl fail to accomplish the desired object; moreover, I feel that they may do harm. Small doses of from 5 to 10 minims may in some ways prove beneficial, but I consider that there is no evidence to show that they stimulate the secretion of HCl.

Vacations and out-of-door exercise or occupation are important and at times seemingly necessary factors in the cure of gastritis.

419 Boylston Street.

10. Philadelphia Med. Jour., June 6, 1903.
11. An Improved Stomach Tube, THE JOUR. A. M. A., July 28, 1906.
12. Clinical and Laboratory Study of the Therapeutic Value of HCl in Diseases of the Stomach. Boston Med. and Surg. Jour., Sept. 14, 1905.
13. Therapeutic Value of Some Digestive Preparations. Boston Med. and Surg. Jour., May 18, 1905.

A GRAPHIC METHOD IN PRACTICAL DIETETICS.

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Professor Mendel, in an address on dietetics before an audience of Boston physicians, asked the very pertinent question: "Why do physicians take so much care in measuring their dosages of drugs, which are administered only occasionally, and so little care in measuring their food prescriptions, which are to be followed daily?" In prescribing drugs, a physician would be regarded as criminally negligent if he simply told his patients to take "a little" strychnia, but to be sure "not to take too much;" or to take a "big dose" of calomel. Yet in prescribing diet, physicians often give just such advice.

Doubtless in the scheme of Nature man was not expected to measure his food. He was provided with healthy, normal instincts instead. But, as often happens in diseased conditions, the food instinct has sometimes become perverted and can not be trusted. The consumptive requires, or at any rate is believed by most physicians to require, more food than his appetite calls for, and the victim of kidney diseases less. To re-establish the instinctive guides to food selection should doubtless be the ultimate aim of the physician; but, to that end, a quantitative determination of the food actually used, and a quantitative regulation thereof, may be advantageously employed. As yet, however, neither the quantity of food nor the proportions of its constituents have been often prescribed with precision.

What Dr. Burton-Fanning says of prescribing food for the consumptive applies to food prescriptions in general, that the whole art of such prescriptions is summed up in the word accuracy.[1] Until recently accuracy was impossible. But to-day, by the aid of elaborate tables of food values constructed by Atwater and Bryant in America, and of mineral salts by Koenig in Germany, and, if great accuracy is required, of coefficients of digestibility, it has become possible to make a true measurement of diet prescriptions.

As to mineral salts, we know at least in which foods they are severally to be found. For instance, if a patient needs iron, he may, instead of taking the preparations of the druggist, have added to his list of foods one or more of the following: lentils, asparagus, lettuce, peas, figs, strawberries, spinach, beans, potatoes, prunes or apples, the order of which is that of the amount of iron contained in proportion to total food value.

Again, if calcium is needed, instead of limewater there may be administered milk, figs, cabbage or lentils. If sulphur is needed, the patient may be given potatoes, peas, beans, asparagus or cabbage; if phosphorus, beans, peas, rice, milk; if silicon, lettuce, cabbage, strawberries, rice, potatoes, barley or cucumbers; if magnesium, peas, beans, cocoanuts, barley and rice; if chlorin, cocoanuts, milk, lentils, asparagus, cabbage; if sodium, lentils, figs, asparagus; if potassium, beans, lentils, peas, cocoanuts, potatoes. Or if simply mineral salts in general are required, they are found in large quantities in proportion to food value, among lentils, peas, beans, cocoanuts, potatoes, milk, rice, figs, apples, barley, cabbage and chestnuts.

There are data also which describe the amount and kinds of acids in foods, their peptogenic qualities, their effects on peristalsis, etc.

THE BASIS OF COMPUTATION.

But the ordinary problems of dietetics are concerned not so much with these minor constituents and properties of foods as with the amount and proportions of proteids, fats and carbohydrates.

Two methods have hitherto been used for computing proportions of proteids, fats and carbohydrates. One consists in using the tables of percentages by weight of proteids, fats and carbohydrates; the other, Dr. J. H. Kellogg's, in using a table which gives the number of calories in the form of proteids, fats and carbohydrates per ounce of each kind of food. These may be described, respectively, as the method of weight per cent. and the method of calories per ounce. The method here suggested is different from either, and may be called the method of calories per cent. It takes as its starting point not a unit of weight, but a unit of food value, called a "standard portion" of each kind of food. A "standard portion" is defined as that amount of food which contains 100 calories. A table is constructed which gives the weight in a "standard portion" of each particular kind of food, and out of the 100 calories contained therein the number of calories in the form of proteids, fats and carbohydrates. The three methods were discussed and the last named explained in detail in another paper.[2] We shall, therefore, pass over this part of our subject very briefly in the present paper and devote our main attention to the practical application.

In order to carry out this method, foods should be served at the table in "standard portions" or simple multiples thereof. The amount of milk served, instead of being a whole number of ounces, should be (for average milk) 4.9 ounces—the amount that contains 100 calories. This "standard portion" constitutes about two-thirds of an ordinary glass of milk. Of the 100 calories which it contains, 19 will be in the form of proteid, 52 in fat, and 29 in carbohydrates. In other words, of the food value of milk, 19 per cent. is proteid, 52 per cent. fat, and 29 per cent. carbohydrates.

One advantage of this method is apparent at once. It enables us to make a true comparison between different foods as to the relative amounts of proteid, fat and carbohydrate. The other methods are misleading in this regard. For instance, though it is well recognized that milk is a higher proteid food than pecan nuts, yet if we compare milk and pecans on the basis of the method of "weight per cent.," we shall find that the pecans appear three times as rich in proteid, milk containing 3.3 per cent. and pecans 11 per cent. But if we compare them on the basis of "calories per cent.," we find that, while milk contains 19 calories of proteid out of each 100 of total calories, pecans contain only 6, milk showing three times as much proteid as pecans. The paradox that pecans are higher in proteid per ounce but lower in proteid per 100 calories is due to the fact that pecans are a much more concentrated food than milk; whereas 100 calories of milk weigh 4.9 ounces, 100 calories of pecans weigh only half an ounce. The weight of a "standard portion" of any food, i. e., of that amount which contains 100 calories, is a measure of the degree of concentration. The most concentrated of all foods is probably olive oil, which contains 100 calories in a little over one-third of an ounce (.38 oz.). Watermelon represents a food at the opposite extreme, of which over 1½ pounds are required to yield the 100 calories. In order that the "calories per cent." method may be easily put in practice, it is necessary to have a table giving the weight constituting a "standard portion" (i. e., the amount yielding 100 calories) and the calories of proteid, fat and carbohydrate in this portion. At the close of the present article such a table is given, computed chiefly from the tables of Atwater and Bryant and, for made dishes, from those of Dr. Kellogg. The chief advantage of this method of expressing food values is that it lends itself readily to graphic representation. The difficulty in the practical use of most tables of food values is that they can not be visualized.

THE GRAPHIC METHOD.

Different foods contain the three food elements, proteids, fats and carbohydrates, in different proportions. The tripartite constitution of any particular food is represented in the present method by the position of a point in the triangle[3] CPF (Fig. 1). The method of locating the point on the triangle is analogous to that of locating a city on a map by latitude and longitude; the per cent. of proteid[4] in the food is represented, like latitude, by the height of the point above the base line CF (the total height, CP, being taken as 100 per cent.) The percentage of fat is represented, like longitude, by the distance

1. For a statement of the great divergences of sanatoria from this ideal, see "Statistics of Diet in Consumptive Sanatoria," Fisher, Tran. Second Annual Meeting, Nat. Assoc. for Study and Prevention of Tuberculosis, New York, 1907; also in Am. Jour. of the Med. Sci., October, 1906.

2. Fisher: "A New Method for Indicating Food Values." Amer. Jour. of Physiol., April 1, 1906.

3. For convenience, the triangle is drawn with one angle, C, a right angle and the two sides about it equal.

4. I employ the term proteid, although in the tables the figures represent "protein" (i. e., 6¼ times nitrogen), the usual makeshift for proteid.

of the point horizontally from the vertical line CP (the total horizontal breadth, CF, being taken as 100 per cent.). Thus, the point O, representing milk, is located at a height above CF ("latitude") 19 per cent. of the total height of the triangle, which signifies that 19 per cent. of the food value of milk is proteid; and at a distance to the right of CP ("longitude") 52 per cent. of the total breadth of the triangle, which signifies that 52 per cent. of the food value of milk is fat. Foods high in proteid will be represented by points high up in the triangle. White of egg, of which the food value is all proteid, will be represented at the point P, representing 100 per cent. P is, therefore, called the "proteid corner" of the triangle. Foods rich in fats, as nuts, cream, butter, are represented by points far to the right. Pure fats like olive oil are located at F at the extreme right, representing 100 per cent. of fat. F is, therefore, called the "fat corner."

The point representing a food is completely located by means of the percentage of proteid and fat; no attention need be paid to the carbohydrate. If, however, it is desired to find the carbohydrate, its percentage is readily determined, being what is left of 100 calories not already accounted for by proteid and fat. Thus, a "standard portion" of cottage cheese, being 76 per cent. proteid and 8 per cent. fat, will have left 16 per cent. of carbohydrate. If one desires a graphic representation,

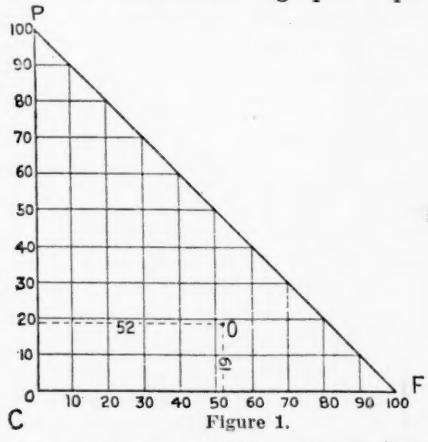

Figure 1.

it is found in the distance of the point O from the third side of the triangle, FP (the total distance of this side from the opposite corner being taken as 100 per cent.). Foods like bread, cereals and fruits, which are mostly carbohydrate, will thus be represented by points far away from the side FP. Foods such as sugar, of which the food value is wholly carbohydrate, will be represented at the remotest point C, representing 100 per cent. carbohydrate, which is, therefore, called the "carbohydrate corner."

Any food is thus represented on the "food map" by a point the relative distances of which from the three sides of the triangle represent the proteid, fat and carbohydrate.[5] On this food map, fatty foods are represented by points near the fat corner, F, starchy and saccharine foods by points near the carbohydrate corner, C. and proteid foods by points near the proteid corner, P. A food devoid of proteid is evidently located on the base line C; a food devoid of fat, on the side CP, and a food devoid of carbohydrate on FP. The chief classes are represented in the accompanying diagrams, flesh foods and cereals being shown in Figure 2, nuts and fruits in Figure 3, vegetables in Figure 4, puddings, pies, pastries and sweets in Figure 5, dairy products, eggs and meat substitutes in Figure 6, and soups, salads and relishes in Figure 7. In each case, the position of the point relatively to the sides of the triangle represents the proportions of the proteids, fats and carbohydrates, and the number opposite each name represents the weight (in ounces) of a "standard portion."

This method of representing food values reveals some striking facts—for instance, the great variations in the proportion of proteid in different vegetables. Vegetables

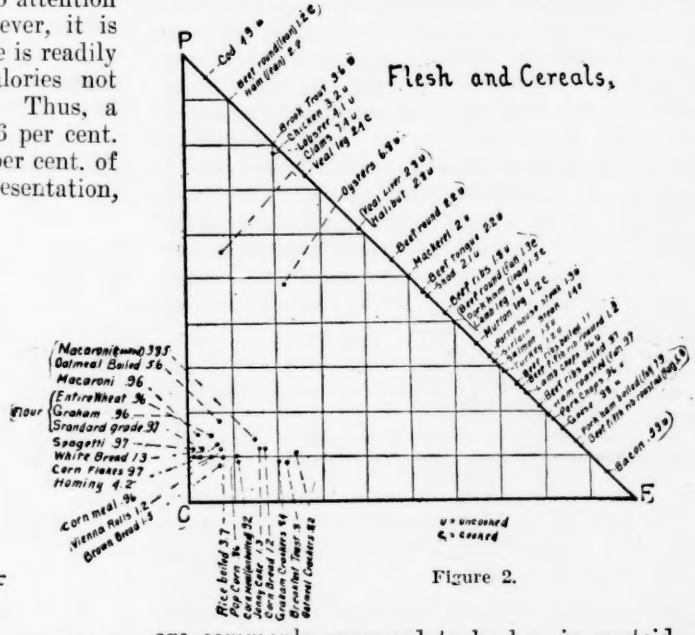

Figure 2.

are commonly supposed to be low in proteid. This is true of some vegetables, such as beets, artichokes and sweet potatoes; but others are high in proteid, such as asparagus, cabbage, cauliflower, celery, cucumbers, eggplant, radishes, spinach, squash, and tomatoes.[6] Among fruits also we find some instances of moderately high proteid, such as strawberries and blackberries, oranges and watermelon. These foods are as high in proteid, in proportion to total food value, as most nuts and cereals. On the other hand, dried fruits, which are sometimes mentioned as containing a higher percentage of proteid than other fruits, are as a matter of fact often much lower. Thus, dates contain but 2 per cent., prunes and raisins 3 per cent., figs 5 per cent.

It is evident that in most cases foods of the same class show a family resemblance. Meats and other flesh foods, with the exception of shellfish, are represented by points on FP, being devoid of carbohydrates. Cereals are represented by points near the carbohydrate corner,

5. It has been shown elsewhere (Amer. Jour. of Physiol., April, 1906, pp. 422-4) that this method of visualizing the composition of any food carries another method with it. If from the point O (Fig. 1), the position of which in the triangle indicates the food composition (of milk, for instance), we draw straight lines to the three corners of the triangle, thus resolving the triangle into three constituent triangles, it may be shown that if we call the total area of the triangle 100 to represent a "standard portion" (100 calories) of the food, then the three partial triangles will exactly represent the constituents for proteid, fat and carbohydrate. The triangle representing proteid is COF, i. e., the triangle whose altitude to O represents proteid in the first method. Similarly, COP represents fat, and POF carbohydrate. For the graphic representation of particular foods by this method of triangles, see the article already cited. In the present article only the method of lines, or, as we may call it, the "latitude and longitude" method will be employed.

6. It should be stated, however, that all estimates of proteid are, strictly speaking, "protein," i. e., 6¼ times the contained nitrogen. In some cases proteid and protein are not identical, but the former is less than the latter, owing to the fact that some of the nitrogen is not in proteid but in a waste or useless form. This is true of almost all the proteid of meat soups, which have, therefore, practically no food value except a peptogenic one. As to vegetables, in default of exact data, no correction from protein to proteid is here attempted.

C; nuts, with the exception of chestnuts, are located near the fat corner, F; fruits, with the exception of olives, near the carbohydrate corner, C; vegetables show a large range within the triangle. In Figure 8 the range of each of these classes is approximately shown.

The foods eaten at a meal may thus be indicated by points on the "food map." Opposite each point should be written the amount eaten, measured in "standard portions." This array of points presents a picture of what foods and how much of each have been eaten, and shows at a glance their characteristics. But to use this properly we need to combine these points into one point,

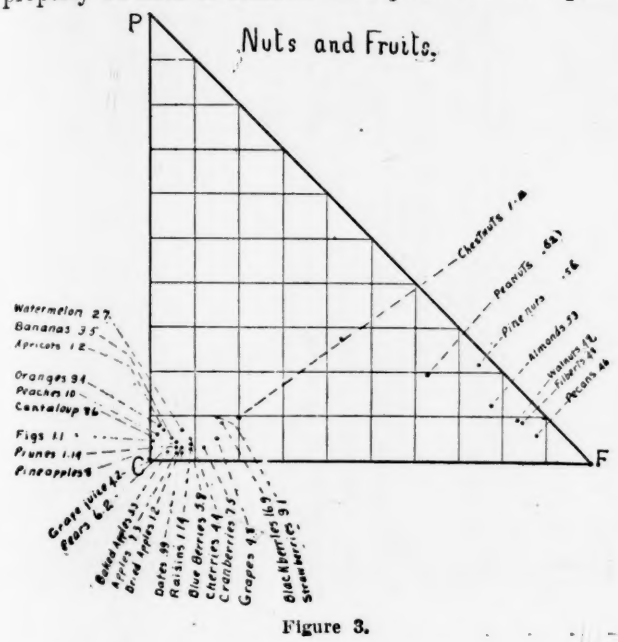

Figure 3.

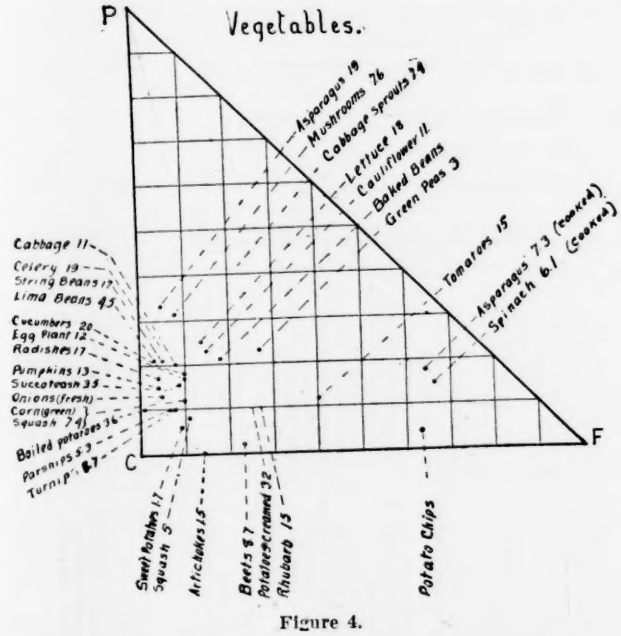

Figure 4.

their center of gravity, which represents the entire meal. This may be done in various ways.

DEMONSTRATING COMBINATIONS.

The combination of two foods equal in calories is represented by a point midway between them. Thus, to combine one "portion" of bread and one "portion" of butter (Fig. 9) draw a straight line between their points, and at the middle of it mark a cross and label it "2;" this point will represent two "portions" of bread and butter.

If the calories of the two foods are unequal, the point representing the combination will be proportionately nearer the point with the larger number. Thus, if one portion of bread is combined with one-half portion of butter, the bread-and-butter point will not be midway between the points for bread and for butter, but will lie twice as near the bread point as the butter point. Its approximate position may be found with great rapidity by the eye without making exact measurements.

When three foods are combined, the point representing the combination is, in like manner, the "center of gravity" of the three, and may be found by first obtain-

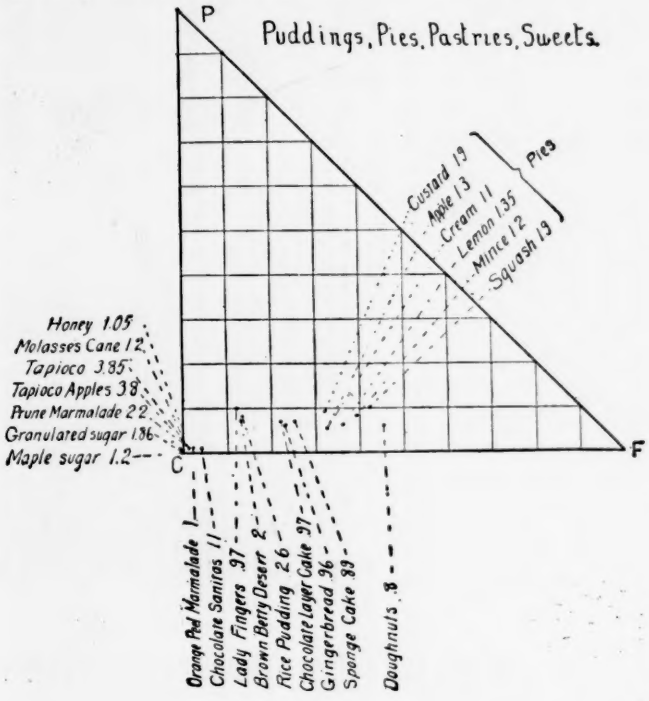

Figure 5.

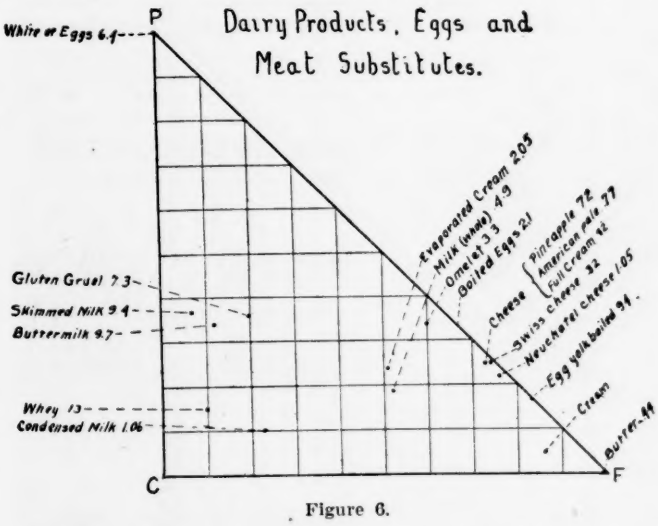

Figure 6.

ing the center of gravity of two, and then obtaining the center of gravity of the point thus obtained, and the third. Thus if, as in Figure 10, we have three points representing, respectively, 3, 4, and 5 calories of three separate foods, shown by the attached numbers 3, 4 and 5, the point representing the combination may be found by joining the points labelled 3 and 4, and finding their center of gravity, 7, situated nearer the point 4 than point 3, and dividing the line between them in the ratio of 3 to 4. The first two points, 3 and 4, may be consid-

TABLE OF FOODS GIVING THE WEIGHT (IN GRAMS, OUNCES AND ROUGH MEASURE) OF A "STANDARD PORTION" OF EACH FOOD AND THE NUMBER OF CALORIES IN THAT "PORTION" IN THE FORM OF PROTEID, FAT AND CARBOHYDRATE.

Name of Food.	"Portion" Containing 100 Calories Roughly Described.	Wt. of 100 Calories.		Per cent. of		
		Grams.	Oz.	Proteid.	Fat.	Carbohydrate.
COOKED MEATS.						
†Beef, round, boiled (fat), 1099§	Small serving	36	1.3	40	60	00
†Beef, round, boiled (lean), 1206§	Large serving	62	2.2	90	10	00
†Beef, round, boiled (med.), 1188§	Small serving	44	1.6	60	40	00
†Beef, 5th right rib, roasted, 1538§	Half serving	18.5	.65	12	88	00
†Beef,, 5th right rib, roasted, 1616§	Small serving	32	1.2	25	75	00
†Beef, 5th right rib, roasted, 1615§	Very small serving	25	.88	18	82	00
†Beef, ribs boiled, 1169§	Small serving	30	1.1	27	73	00
†Beef, ribs boiled, 1170§	Very small serving	25	.87	21	79	00
*Calves foot jelly, as purchased		112	4.	19	00	81
*Chicken, as purchased, canned	One thin slice	27	.96	23	77	00
*Lamb chops, boiled, edible portion, average	One small chop	27	.96	24	76	00
*Lamb, leg, roast	Ordinary serving	50	1.8	40	60	00
†Mutton, leg, boiled, 1184§	Large serving	34	1.2	35	65	00
†Pork, ham, boiled (fat) 1174§	Small serving	20.5	.73	14	86	00
†Pork, ham, boiled, 1192§	Ordinary serving	32.5	1.1	28	72	00
†Pork, ham, roasted (fat), 1484§	Small serving	27	.96	19	81	00
†Pork, ham, roasted (lean), 1511§	Small serving	34	1.2	33	67	00
*Turkey, as pur., canned	Small serving	28	.99	23	77	00
†Veal, leg, boiled, 1182§	Large serving	67.5	2.4	73	27	00
UNCOOKED MEATS.						
*Beef, loin, edible portion, average (lean)	Ordinary serving	50	1.8	40	60	00
*Beef, loin, edible portion, average (fat)	Small serving	30	1.1	22	78	00
*Beef, loin, porterhouse steak, edible por., av.	Small steak	36	1.3	32	68	00
*Beef, loin, sirloin steak, edible portion, av.	Small steak	40	1.4	31	69	00
*Beef, ribs, lean, edible portion, average	Ordinary serving	52	1.8	42	58	00
*Beef, round, lean, edible portion, average	Ordinary serving	63	2.2	54	46	00
*Beef, tongue, edible portion, average	Ordinary serving	62	2.2	47	53	00
*Beef, juice		395	14.	78	22	00
*Chicken (broilers), edible portion, average	Large serving	90	3.2	79	21	00
*Clams, round, in shell, edible portion, average	Twelve to sixteen	210	7.4	56	8	36
*Cod, whole, edible portion	Two servings	138	4.9	95	5	00
*Goose (young), edible portion, average	Half serving	25	.88	16	84	00
*Halibut steaks or sec., edible portion, average	Ordinary serving	81	2.8	61	39	00
*Liver (veal), as purchased, average	Two small servings	79	2.8	61	39	00
*Lobsters, whole, edible portion, average	Two servings	117	4.1	78	20	2
*Mackerel (Spanish), whole, edible portion, av.	Ordinary serving	57	2.	50	50	00
*Mutton leg, hind, lean, edible portion, average	Ordinary serving	50	1.8	41	59	00
*Oysters, in shell, edible portion, average	One dozen	193	6.8	49	22	29
*Pork, loin chops, edible portion, average	Very small serving	27	.97	18	82	00
*Pork, ham, smoked, lean, edible portion, av.	Small serving	36	1.3	29	71	00
*Pork, bacon, smoked, med. fat, edible por., av.	Small serving	15	.53	6	94	00
*Salmon (California), ant. sec., ed. por., av	Small serving	42	1.5	30	70	00
Shad, whole, edible portion, average	Ordinary serving	60	2.1	46	54	00
*Trout, brook, whole, edible portion, average	Two small servings	100	3.6	80	20	00
*Turkey, edible portion, average	Two small servings	33	1.2	29	71	00
VEGETABLES.						
*Artichokes, as purchased, average, canned		430	15	14	0	86
*Asparagus, as purchased, average, canned		540	19	33	5	62
*Asparagus, as purchased, average, cooked		206	7.19	18	63	19
*Beans, baked, canned	Small side dish	75	2.66	21	18	61
*Beans, Lima, canned	Large side dish	126	4.44	21	4	75
*Beans, string, cooked	Five servings	480	16.66	15	48	37

Name of Food.	"Portion" Containing 100 Calories Roughly Described.	Wt. of 100 Calories.		Per cent. of		
		Grams.	Oz.	Proteid.	Fat.	Carbohydrate.
FRUITS (FRESH OR COOKED).						
*Apples, as purchased	Two apples	206	7.3	3	7	99
Apples, baked		94	3.3	2	5	93
Apples, sauce	Ordinary serving	111	3.9	2	5	93
*Apricots, edible portion, average		168	5.92	8	0	92
Apricots, cooked	Large serving	131	4.61	6	0	94
*Bananas, yellow, edible portion, average	One large	100	3.5	5	5	90
*Blackberries, as purchased, average		170	5.9	9	16	75
Blueberries		128	4.6	3	8	89
*Blueberries, canned, as purchased		165	5.8	4	9	87
Cantaloupe	Half ord. serving	243	8.6	6	0	94
*Cherries, edible portion, average		124	4.4	5	10	85
*Cranberries, as purchased, average		210	7.5	3	12	85
*Grapes, as purchased, average		136	4.8	5	15	80
Grape fruit		215	7.57	7	4	89
Grape juice	Small glass	120	4.2	0	0	100
Gooseberries		261	9.2	5	0	95
*Lemons		215	7.57	9	14	77
Lemon juice		246	8.77	0	0	100
Nectarines		147	5.18	4	0	96
Olives, ripe	About seven olives.	37	1.31	2	91	7
*Oranges, as purchased, average	One very large	270	9.4	6	3	91
Oranges, juice	Large glass	188	6.62	0	0	100
*Peaches, as purchased, average	Three ordinary	290	10.	7	2	91
Peaches, sauce	Ordinary serving	136	4.78	4	2	94
Peaches, juice	Ordinary glass	136	4.80	0	0	100
*Pears	One large pear	173	5.40	4	7	89
Pears, sauce		113	3.98	3	4	93
*Pineapples, edible portion, average		226	8.	4	6	90
Raspberries, black		146	5.18	10	14	76
Raspberries, red		178	6.29	8	0	92
*Strawberries, as purchased, average	Two servings	260	9.1	10	15	75
*Watermelon, as purchased, average		760	27.	6	6	88
CAKES, PASTRY, PUDDING AND DESSERTS.						
*Cake, chocolate layer, as purchased	Half ord. square piece	28	.98	7	22	71
*Cake, gingerbread, as purchased	Half ord. square piece	27	.96	6	23	71
*Cake, sponge, as purchased	Small piece	25	.89	7	25	68
Custard, caramel		71	2.51	19	10	71
Custard, milk	Ordinary cup	122	4.29	26	56	18
Custard, tapioca	Two-thirds ordinary	69.5	2.45	9	12	79
*Doughnuts, as purchased	Half a doughnut	23	.8	6	45	49
*Lady fingers, as purchased		27	.95	10	12	78
*Macaroons, as purchased		23	.82	6	33	61
*Pie, apple, as purchased	One-third ord. piece	38	1.3	5	32	63
*Pie, cream, as purchased	One-fourth " "	30	1.1	5	32	63
*Pie, custard, as purchased	One-third " "	55	1.9	9	32	59
*Pie, lemon, as purchased	One-third " "	38	1.35	6	36	58
*Pie, mince, as purchased	One-fourth " "	35	1.2	8	38	54
*Pie, squash, as purchased	One-third " "	55	1.9	10	42	48
Pudding, apple sago		81	3.02	6	3	91
Pudding, brown betty	Half ord. serving	56.6	2.	7	12	81
Pudding, cream rice	Very small serving	75	2.65	8	13	79
Pudding, Indian meal	Half ord. serving	56.6	2.	12	25	63
Pudding, apple tapioca	Small serving	79	2.8	1	1	98
Tapioca, cooked	Ordinary serving	108	3.85	1	1	98

*Beets, edible portion, cooked	Three servings	245	8.7	2	23	75
*Cabbage, edible portion		310	11	20	8	72
*Carrots, edible portion, average, fresh		215	7.6	10	8	82
Carrots, cooked	Two servings	164	5.81	10	34	56
*Cauliflower, as purchased, average		312	11	23	15	62
*Celery, edible portion, average		540	19	24	5	71
Corn, sweet, cooked	One side dish	99	3.5	13	10	77
*Cucumbers, edible portion, average		565	20	18	10	72
*Egg plant, edible portion, average		350	12	17	10	73
Lentils, cooked		89	3.15	27	1	72
*Lettuce, edible portion, average		505	18	25	14	61
*Mushrooms, as purchased, average		215	7.6	31	8	61
*Onions, fresh, edible portion, average		200	7.1	13	5	82
*Onions, cooked	Two large servings	240	8.4	12	40	48
*Parsnips, edible portion, average	1½ serving	152	5.3	10	7	83
Parsnips, cooked		163	5.84	10	34	56
*Peas, green, canned	Two servings	178	6.3	25	3	72
*Peas, green, cooked	One serving	85	3	23	27	50
Potatoes, baked	One good sized	86	3.05	11	1	88
*Potatoes, boiled	One large sized	102	3.62	11	1	88
*Potatoes, mashed (creamed)	One serving	89	3.14	10	25	65
Potatoes, steamed	One serving	101	3.57	11	1	88
*Potatoes, chips	One-half serving	17	.6	4	63	33
*Potatoes, sweet, cooked	Half of av. potato	49	1.7	6	9	85
*Pumpkins, edible portion, average		380	13	15	4	81
Radishes, as purchased		480	17	18	3	79
Rhubarb, edible portion, average		430	15	10	27	63
*Spinach, cooked, as purchased	Two ord. servings	174	6.1	15	66	19
*Squash, edible portion, average		210	7.4	12	10	78
*Succotash, canned, as purchased, average	Ordinary serving	100	3.5	15	9	76
*Tomatoes, fresh, as purchased, average	Four av. tomatoes	430	15	15	16	69
Tomatoes, canned		431	15.2	21	7	72
*Turnips, edible portion, average	Two large servings	246	8.7	13	4	83
Vegetable oysters		273	9.62	10	51	39

DAIRY PRODUCTS.

*Butter, as purchased	Ordinary pat or ball	12.5	.44	.5	99.5	00
*Buttermilk, as purchased	1½ glass	275	9.7	34	12	54
*Cheese, American, pale, as purchased	1½ cubic in.	22	.77	25	73	2
*Cheese, cottage, as purchased	4 cubic in.	89	3.12	76	8	16
*Cheese, full cream, as purchased	1½ cubic in.	23	.82	25	73	2
*Cheese, Neufchatel, as purchased	1½ cubic in.	29.5	1.05	22	76	2
*Cheese, Swiss, as purchased	1½ cubic in.	23	.8	25	74	1
*Cheese, pineapple, as purchased	1½ cubic in.	20	.72	25	73	2
*Cream	¼ ordinary glass	49	1.7	5	86	9
Kumyss		188	6.7	21	37	42
*Milk, condensed, sweetened, as purchased		30	1.06	10	23	67
*Milk, condensed, unsweetened (evap. cream) as purchased		59	2.05	24	50	26
*Milk, skimmed, as purchased	1½ glass	255	9.4	37	7	56
*Milk, whole, as purchased	Small glass	140	4.9	19	52	29
*Whey, as purchased	Two glasses	360	13	15	10	75

FRUITS (DRIED).

*Apples, as purchased, average		34	1.2	3	7	90
Apricots, as purchased, average		35	1.24	7	3	90
*Dates, edible portion, average	Three large	28	.99	2	7	91
*Dates, as purchased		31	1.1	2	7	91
*Figs, edible portion, average	One large	31	1.1	5	0	95
*Prunes, edible portion, average	Three large	32	1.14	3	0	97
*Prunes, as purchased		38	1.35	3	0	97
*Raisins, edible portion, average		28	1.	3	9	88
*Raisins, as purchased		31	1.1	3	9	88

† Experiments on Losses in Cooking Meats, (1900-03), Grindley, U. S. Department of Agriculture Bull. No. 141.

§ Laboratory number of specimen, as per Experiments on Losses in Cooking Meat.

* Chemical Composition of American Food Materials, Atwater and Bryant, U. S. Department of Agriculture, Bull. No. 28.

SWEETS AND PICKLES

*Catsup, tomato as purchased, average		170	6.	10	3	87
*Honey, as purchased	Four teaspoonfuls	30	1.05	1	0	99
*Marmalade (orange peel)		28.3	1.	.5	2.5	97
*Molasses, cane		35	1.2	.5	0	99.5
*Olives, green, edible portion	Seven olives	32	1.1	1	84	15
*Olives, ripe, edible portion	Seven olives	38	1.3	2	91	7
*Pickles, mixed, as purchased		415	14.6	18	15	67
*Sugar, granulated	Three teaspoonfuls or 1½ lumps	24	.86	0	0	100
*Sugar, maple	Four teaspoonfuls	29	1.03	0	0	100
*Syrup, maple	Four teaspoonfuls	35	1.2	0	0	100

NUTS.

*Almonds, edible portion, average	About eight	15	.53	13	77	10
*Beechnuts		14.8	.52	13	79	8
*Brazil nuts, edible portion	Three ord. size	14	.49	10	86	4
*Butternuts		14	.50	16	82	2
*Cocoanuts		16	.57	4	77	19
*Chestnuts, fresh, edible portion, average		40	1.4	10	20	70
*Filberts, edible portion, average	Ten nuts	14	.48	9	84	7
*Hickory nuts		13	.47	9	85	6
*Peanuts, edible portion, average	Thirteen double	18	.62	20	63	17
*Pecans, polished, edible portion	About eight	13	.46	6	87	7
*Pine nuts (pignolias), edible portion	About eighty	16	.56	22	74	4
*Walnuts, California, edible portion	About six	14	.48	10	83	7

CEREALS.

*Bread, brown, as purchased, average	Ordinary thick slice	43	1.5	9	7	84
*Bread, corn (johnnycake) as purchased, av.	Small square	38	1.3	12	16	72
*Bread, white, home made, as purchased	Ordinary thick slice	38	1.3	13	6	81
Corn flakes, toasted	Ord. cereal dish full	27	.97	11	1	88
*Corn meal, granular, average		27	.96	10	5	85
*Corn meal, unbolted, edible portion, average		26	.92	9	11	80
*Crackers, graham, as purchased	Two crackers	23	.82	9	20	71
*Crackers, oatmeal, as purchased	Two crackers	23	.81	11	24	65
*Hominy, cooked	Large serving	120	4.2	11	2	87
*Macaroni, average		27	.96	15	2	83
*Macaroni, average, cooked	Ordinary serving	110	3.85	14	15	71
*Oatmeal, average, boiled	1½ serving	159	5.6	18	7	75
*Popcorn, average		24	.86	11	11	78
*Rice, uncooked		28	.98	9	1	90
*Rice, boiled, average	Ord. cereal dish	87	3.1	10	1	89
*Rice, flakes	Ord. cereal dish	27	.94	8	1	91
*Rolls, Vienna, as purchased, average	One large roll	35	1.2	12	7	81
*Shredded wheat	One biscuit	27	.94	13	4.5	82.5
*Spaghetti, average		28	.97	12	1	87
*Wheat flour, entire wheat, average		27	.96	15	5	80
*Wheat flour, graham, average		27	.96	15	5	80
*Wheat flour, patent roller process, family and straight grade spring wheat, average		27	.97	12	3	85
*Zweiback	Size of thick slice of bread	23	.81	9	21	70

MISCELLANEOUS.

*Eggs, hen's, boiled	One large egg	59	2.1	32	68	00
*Eggs, hen's, whites		181	6.4	100	0	00
*Eggs, hen's, yolks	Two yolks	27	.94	17	83	00
*Omelet		94	3.3	34	60	6
*Soup, beef, as purchased, average		380	13.	69	14	17
*Soup, bean, as purchased, average	Very large plate	150	5.4	20	20	60
*Soup, cream of celery, as purchased, average	Two plates	180	6.3	16	47	37
*Consomme, as purchased		830	29.	85	00	15
*Clam chowder, as purchased	Two plates	230	8.25	17	18	65

ered as concentrated at 7 with their combined weight, 7. We then find the center of gravity of this new point 7 and the remaining point, 5. The center of gravity of this point 7 and point 5 will be a point, 12, on the straight line between them, situated nearer the 7 than the 5, and dividing the distance between in the ratio of 5 to 7. At point 12 the whole combination of 12 portions may be considered to be concentrated. It is evident that we could find the center of gravity of the same three points by combining them in a different order, but the result would be the same.

It is also evident that more than three points may be combined on the same principles by combining them by twos and threes and then combining the combinations.

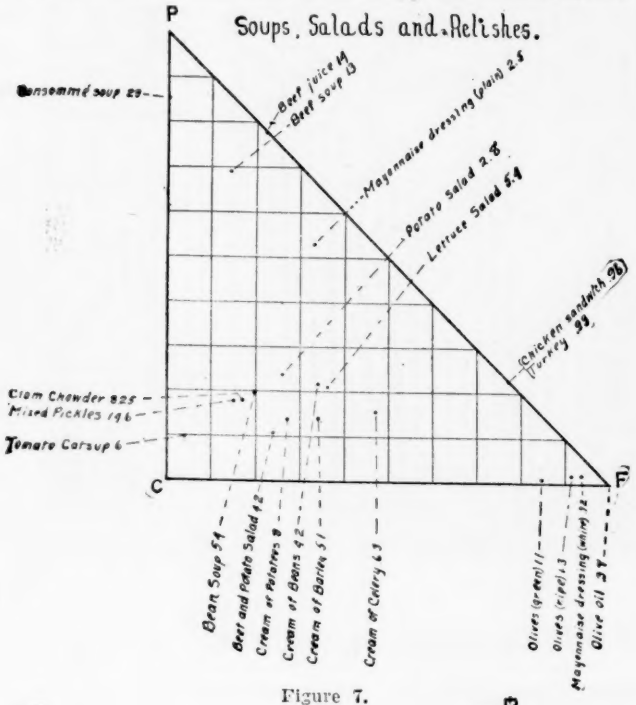

Figure 7.

All foods may be classified according to their location relatively to this rectangle. Thus, all foods located above the rectangle are high-proteid foods; all below, low-proteid foods; all within, normal-proteid foods. Looking at the "food map" we see among the high-proteid foods, beginning with the lowest, graham bread, macaroni, tomatoes, whole-wheat bread, pine nuts, beans, buttermilk, cheese and meats. Among the low-proteid foods, beginning with the highest, are most fruits (except raspberries and strawberries), cream, pecans, olives, butter, olive oil, sugar. Among the foods normal in proteid are most breads, wheat flakes, corn flakes, strawberries, raspberries, chestnuts and most other nuts (except pine nuts and pecans). In the same way we may classify foods as to their richness in fat or carbohydrate; but there is a larger range allowable for these elements than for proteid. High proteid foods tend to make the

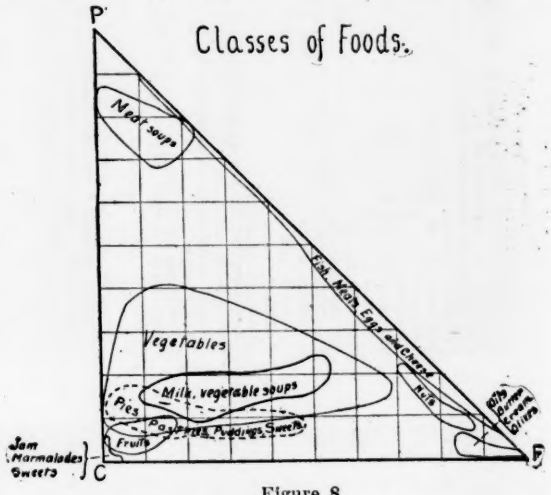

Figure 8.

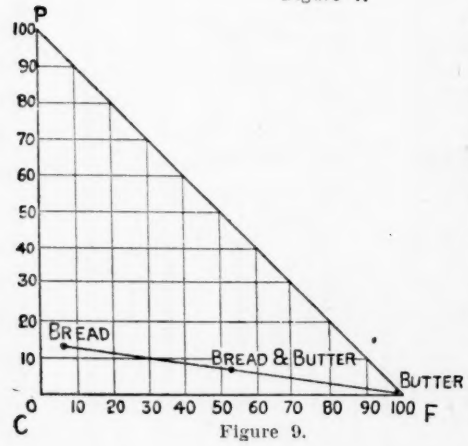

Figure 9.

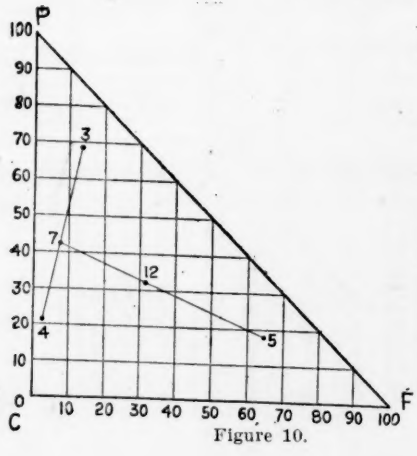

Figure 10.

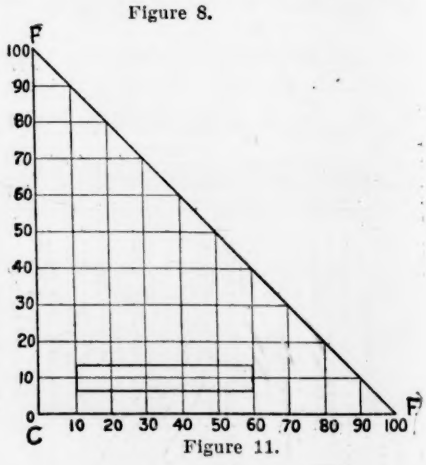

Figure 11.

When all the points are combined into one point, that point will represent the entire meal. If the final point thus found is labeled "22," and is located 20 per cent. up and 30 per cent. to the right, this shows that in all twenty-two "portions" (2,200 calories) have been consumed, of which 20 per cent. (440 calories) are proteid, 30 per cent. (660 calories) are fat, and the balance, 50 per cent. (1,100 calories), are carbohydrate.

The ration here exemplified contains too much proteid. If we accept Professor Chittenden's[7] results as to proteid requirements, a well-balanced daily ration for the average person will be represented by a point lying within the "normal rectangle," as shown in Figure 11. This shows that proteid should be near 10 per cent.

ration high in proteid, and will do so unless balanced by low-proteid foods. Most persons consume much more proteid than that in the Chittenden standard. This excess may be avoided either by omitting foods high in proteid or by using them very sparingly.

Since the resultant point, representing the ration, is the center of gravity of the points representing its constituents, it is evident that it can be obtained by mechanical as well as by geometrical methods. For this purpose a mechanical diet indicator has been devised, as shown in Figures 12, 13, 14, 15.

The essential feature of this apparatus is a card on

7. See his "Physiological Economy in Nutrition," New York (Stokes), 1904.

which is drawn the right-angled triangle with which we have already become familiar. Points on this card may be located to represent the various foods employed. These points may be easily found from tables given at the end of this article. Points representing the most common foods may be already printed on it. At points representing foods eaten, pins with heavy heads are thrust through the cardboard (Fig. 12), the weight of each representing one "standard portion." Similar pins, but one-half and one-quarter as heavy, are also provided to represent half and quarter "portions." When these pins are placed, the total ration which has been consumed is easily found, simply by counting the "portions" thus represented. For instance, if there are 15 pins representing "standard portions" and 10 pins representing half "portions" (and therefore five full "portions"), the total ration is 20 "portions," or 2,000 calories. In order to find the percentages of proteid, fat and carbohydrate in this ration, it is only necessary to obtain the center of gravity of all the pins. For this purpose the card is placed in a basket (Fig. 13) and suspended on a standard (Fig. 14) so that the center of gravity of the pins may assume a position vertically under the point of support. The position of this center of gravity is easily indicated on the card by means of a vertical pricker (Fig. 15), which may be pressed on the card. Thus, almost instantaneously, the center of gravity is found. The total time consumed in placing the pins, adjusting the card and basket, and finding the center of gravity, is found to be, for accurate work, about five minutes.[8]

The mechanism in which the cardboard triangle is held is so arranged that when the cardboard is horizontal the center of gravity falls at a point indicating normal food proportions. If the center of gravity is at some other point, the cardboard will tip, showing that the ration is not "balanced." If the proteid vertex tips down, it indicates an excess of proteid; if the fat vertex, excess of fat; if the carbohydrate vertex, excess of carbohydrate.

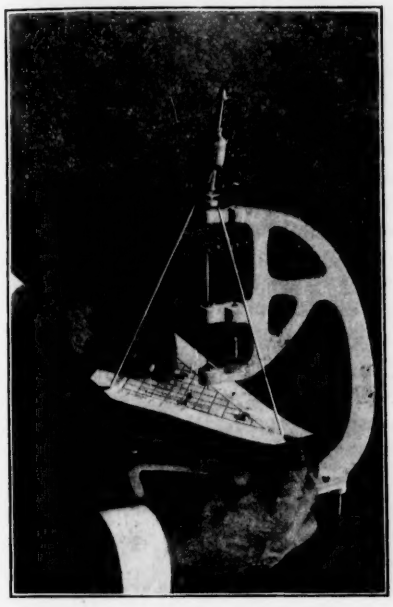

Figure 12.

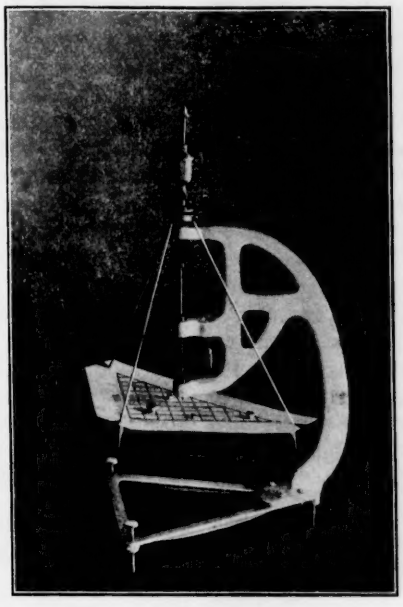

Figure 14.

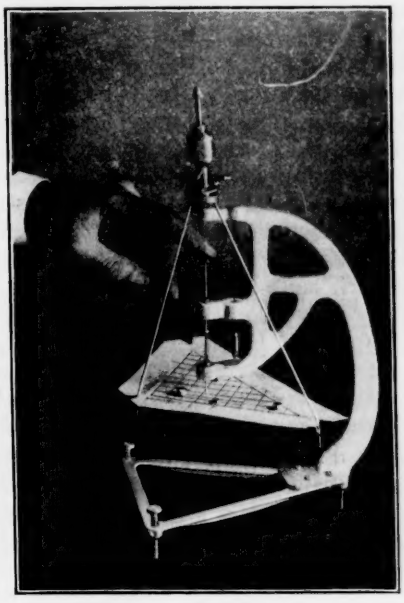

Figure 15.

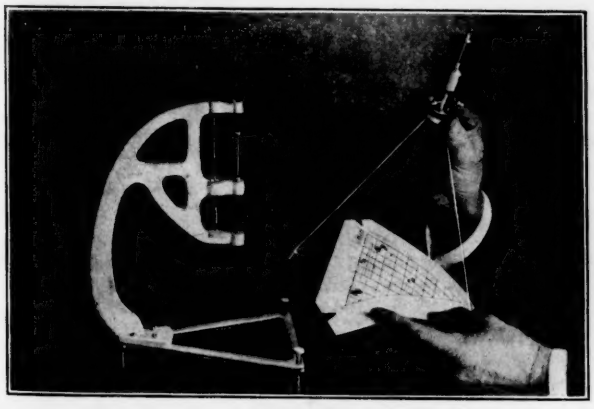

Figure 13.

It is now evident that, by means of the mechanism and the rectangles marked on the card, it is a simple matter to discover whether a particular diet conforms to any given standard. It is equally simple to correct discrepancies thus found, and, if need be, the corrections may be made in advance and the balanced ration prescribed. A trial ration may be put on the card, and if it fails to balance, the pins may be rearranged and balanced with far greater rapidity than the corresponding operations could be carried out by arithmetical computations.

One advantage, however, of the foregoing methods is that, whether the object is merely to record what is consumed or actually to prescribe, the patient need not be annoyed by having scales at table. All weighing may be done in the kitchen and the food served in "standard portions" or in known multiples or fractions of such portions. It is only necessary that the patient, or some one else, shall report exactly what part of the various portions served has been consumed. The patient need not even know the food values of the portions served to him, and thus the introspection and trepidation, which often defeat the very aim of diet prescription for

8. The weight of the cardboard and the basket containing it is eliminated by the construction of the basket. Its center of gravity (when containing the cardboard *without* pins) exactly coincides with the point of support. Hence, when the basket with the card (but *without* pins) is placed on the point of support, it tends neither to swing (which would imply stable equilibrium) nor to be top-heavy (which would imply unstable equilibrium), but is in "neutral" equilibrium, and will remain at any angle at which it is placed.

the sick, may be avoided. For well persons who desire to keep a record of their dietary, the method here given has the advantage that when it is once made familiar it can be employed without any apparatus. One soon becomes able to recognize the quantities of the ordinary foods which contain 100 calories, and to hold in memory the position on the triangle where these foods are indicated. A little reflection will then enable him to judge how many "standard portions" he has consumed at a meal, and also whether their center of gravity falls within the normal rectangle. If he has a good locative imagination, he can rely entirely on his mental image of the triangle. Any one who has once pictured the foods on the "food map" is not likely to forget their several locations. He will know that a meal in which soup, fish, meat, certain high-proteid vegetables, eggs, cheese, milk and ice cream predominate, must be too high in proteid; for all these foods are located above the "normal rectangle." Moreover, he will be able, after a little practice, to estimate roughly the calorific value of his food. A "portion" of 100 calories may be ascribed to each lamb chop, or its equivalent in other meat, each (large) egg, each two-thirds of a glass of milk, each ordinary potato, large slice of bread, large banana, ordinary pat or square of butter, shredded wheat biscuit or its equivalent in other cereal, eight almonds, half dozen English walnuts, one and one-half lumps of sugar, etc.

To illustrate the method by practical examples, let us suppose that for a particular patient the prescription is for 2,000 calories a day, of foods so combined that the food proportions will be represented by a point within the right half of the rectangle. To carry out this prescription the patient looks at the "food map" and finds no foods on it which themselves fall within the prescribed area. He observes, however, that bread and butter are located on opposite sides of this area, and his eye shows him that a combination of the two in equal parts (by calories, not by weight) will very nearly fall within it, though slightly too low. Corn flakes and cream combine within the set limits; milk and dates (a favorite oriental combination) fall near the mark; poached eggs on toast (with the whites left out) will also come near the proper spot, though slightly too high; any cereal foods or fruits (which lie at the left), combined with foods which lie at the right, as egg yolk, nuts or cream, butter, olives or olive oil will combine nearly right, provided the right-hand foods predominate. Choosing such of these combinations as are most relished, the patient eats his meal. Afterward he, his physician or nurse indicates on the triangle by pencil marks each food which has been eaten, or, if he has a mechanical diet indicator, by the weighted pins. The center of gravity will then show exactly where his meal is located on the "food map," and the total number of "portions" will show how much he has eaten. The cause of any deviation from the prescription will be very apparent. It may be that the point is too high, indicating excessive proteid, and this may be due to too much milk, eggs or meat; or too much cereal food may have displaced the point to the left. These errors may be rectified at the next meal. At the end of the day, from the cards used in the three meals, he selects the three centers of gravity and transfers them to a fourth card, from which, in the same way, the total calories and center of gravity for the three are found; this represents the total day's ration.

Or, again, a patient may at first be given *carte blanche* in his food, merely reporting the "portions" eaten. Each dish being served in "portions," this will require little trouble. In fact, a nurse may do it all by noting what is put on a tray and what is left after the meal. On the basis of the returns, the physician or nurse can tell exactly how much and what proportions the patient is eating, and his besetting dietetic sins will be evident. The physician will be enabled thereby to guide him intelligently, suggesting, for instance, that he reduce his ration to two-thirds of what he has been accustomed to, or reduce meat, eggs, etc., or take more cream and butter, etc. It goes without saying that any change in diet, unless it be a change in amount only, should be gradual.[9] Thus, if a person has been accustomed to excessive proteid, his stomach has probably become adjusted to this condition and secretes a large amount of gastric juice. When the reduction of proteid is sudden, the gastric juice will not at first decrease in proportion, and a large part of this secretion will therefore remain unused. This uncombined acid interferes with the digestion of starch and the person feels a "sour stomach." A gradual reduction of proteid, on the other hand, will avoid this difficulty. The reduction may be more rapid (for the hyperacid) if the proportion of fat is increased, as fat tends to restrain the gastric secretion.

In the winter of 1906 the mechanical diet indicator was employed for five months in an experiment with nine Yale students. No diet was prescribed, and the indicator was used only to record the diet which the men themselves chose. It was found that by following Mr. Fletcher's rules of thorough mastication and obedience to appetite, the men gradually and naturally reduced their proteid. The extraordinary effects on their working power are described elsewhere.[10] To what extent such "natural eating" can help in pathologic cases has not yet been shown, although some physicians are reported to have found it a very valuable aid in their practice. Certainly it could scarcely fail to be more serviceable than the unintelligent and reckless diet prescriptions so often made.

Whether or not diet prescriptions are given, the actual diet employed by patients should receive study. This study is made easy by means of the graphic and mechanical methods.[11] These methods may be used with advantage in the kitchen by housewives desirous of supplying balanced meals, and may be of special service in institutions where it is important to provide complete and well-proportioned nourishment at a minimum of cost. On the mechanical diet indicator the weighted pins may be placed to indicate any proposed meal, and this meal, by a slight adjustment of the weights, may be balanced as exactly as desired.

The accompanying table of foods is classified under several heads:

Cooked meats.	Uncooked meats.
Vegetables.	Dairy products.
Fruits.	Nuts.
Sweets and pickles.	Cereals.
Cakes, pastry, puddings and desserts.	
Miscellaneous.	

APPENDIX.

The preceding table gives the data for the ordinary foods, in a form most readily used for the graphic or the mechanical

9. Hutchinson, Robert: General Considerations on the Therapeutic Uses of Diet. Practitioner, April 1906, p. 470.

10. For a short abstract see Science, Nov. 16, 1906. A full report will appear in the Transactions of the Connecticut Academy of Arts and Sciences.

11. There is no patent on this device; anyone is free to make and use it. The Battle Creek Sanitarium has had experience in constructing the apparatus. A regular instrument maker may take up its manufacture later if conditions warrant.

method. The figures for carbohydrate are included, although, as has been shown, they do not need to be used in practical application, the location of each food on the "food map" being completely determined by its "latitude" and "longitude," i. e., the proportion of the fuel value in proteid and fat respectively. The foods, so far as possible, are prepared foods such as are served on the table, but unfortunately, the main sources of information being *Bulletin No. 28* of the Department of Agriculture, for food materials, it has not been possible to include all prepared dishes desired. Moreover, recipes vary so that it would be impracticable to supply data for such dishes which could be used with advantage or certainty. It is easily possible, however, for any one who uses the table to add to it the necessary data for any made dish of known recipe. All that is necessary is to translate the weights of the various ingredients into a number of "standard portions," and then to locate these ingredients on the "food map" and find their center of gravity. This will indicate the position of the composite food. The weight of a "standard portion" of this food is found by dividing the aggregate weight of all the ingredients used by the number of "portions" in them, as above ascertained.

Thus, to locate sponge cake, when the recipe is 3 eggs, 1 "cup" (4 oz.) sugar, and 1 "cup" (4 oz.) flour; the eggs, if of ordinary size, weigh 4¼ oz. and constitute, as the table shows, 2 "portions;" the sugar, weighing 4 oz., constitutes 4.65 "portions" and the flour, weighing 4 oz., 4.2 "portions." This gives a total weight of 12¼ oz., and 11 as the total number of "portions." Dividing the former by the latter, we have 1.1 oz. as the weight of a "portion" of sponge cake. The position on the "food map" of sponge cake is now found by putting the pins at the points on the map as indicated by the table for sugar, eggs and flour. These weights, representing respectively 4.65, 2, and 4.2 "portions," the center of gravity shows the position of sponge cake, which is about 11 per cent. of proteid and about 12 per cent. of fat. This result does not agree exactly with sponge cake as given in the table, owing to the difference in recipe, that in the table probably including shortening.

Unless great precision is required, a sufficient approximation may be obtained in general by omitting fractional portions: thus, we may call the eggs 2 "portions," the sugar 5, and the flour 4. The resulting center of gravity may be found roughly by the eye, without even the aid of the diet indicator. It is surprising how close such a rough approximation will usually be found to the true value, as the influence of the errors in the particular ingredients, on the combined result, is small, and the various errors usually tend to offset each other.

Should the reader desire to add other items to the table, either of food materials or food stuffs, he may do so by using the sources from which the table is constructed. Thus, if he will obtain from the Department of Agriculture *Bulletin No. 28*, "Chemical Composition of American Food Materials," he may translate the figures there given into the form to be entered in the table as follows: The weight in ounces of a "standard portion" is found by dividing 1,600 by the number of calories per pound given in the table. The calories per cent. of proteid is found by multiplying the figure in the *Bulletin* table giving the weight per cent. of proteid, by 1860 and dividing the result by the figure giving the number of calories per pound. The same calculation and the same factor, 1860, apply to carbohydrate. For fat the same calculation applies, but with the substitution of the factor 4220 in place of 1860. The three results may be verified by adding the resulting figures for proteid, fat and carbohydrate, the sum of which should be 100 per cent. To weigh foods, letter scales will usually suffice, the food being weighed in dishes and the weight of the dishes subtracted.

Abuse of Medical Charity.—Is it presumption on our part to ask the trustees to protect the hospital physician from wasting his strength, time and skill, his capital in life, on those who have no right to them? And, furthermore, to ask them to show due consideration to the family physician by refusing to allow well-to-do people to obtain free treatment at the institutions under their charge?—G. W. Gay, Boston.

MYXEDEMA.

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(*Continued from page 1230.*)

CASE 4.—*White, female, aged 46; multipara; pronounced clinical picture; six years' duration; thyroid therapy; loss of 21½ pounds in eight weeks; recovery.*

Patient.—F. A., American; housewife; Nova Scotia, Canada, was admitted to the Johns Hopkins Hospital March 16, 1895, complaining of "swelling and apathy."

History.—Family and personal history were unimportant. Patient was married and the mother of several children. In her youth she had been a very beautiful woman, and always very active in family and social duties.

Present Illness.—This began insidiously about five or six years before admission, when the patient was about 40 years old, and progressed steadily until it resulted in almost complete physical and mental disability. The face became bloated, the eyeballs being especially full and baggy. Enormous pads developed above the clavicles. Her hands and feet gradually enlarged, and the skin everywhere was unusually harsh and dry. Her hair fell out and she became abnormally sensitive to cold. She was dull and apathetic, but hypersensitive on one point, her looks. She exhibited a dislike for society, and at one time refused to see even the members of her own family. Dr. Osler, who knew her in her youth, at his first visit "could scarcely believe that the bloated shapeless mass of humanity had twenty years ago been the belle of her town."

Physical Examination.—Examination on March 18, 1895, revealed a characteristic edematous facies; forehead was much swollen and infiltrated, but the wrinkles were not obliterated. Both eyelids were infiltrated and edematous, and there were bags of edema in the lower lids. The palpebral orifices were distinctly narrowed. The cheeks looked swollen, and the features were coarse. The movements of the facial and ocular muscles were good. Pupils were active; lips chapped. The tongue was clean, smooth and swollen. There was a distinct swelling above both clavicles and at the back of the neck. The hands were puffy and swollen (though this varied a good deal), and the skin was glazed and cracked.

The skin was universally dry and harsh. The teeth were loose, several were lost and the gums had receded. The hair, which was formerly very abundant, was very thin, and over the scalp there were several irregular bald patches. There was a marked depression, somewhat V-shaped, in the anterior triangle of the neck, and no thyroid gland could be felt. The intelligence was good. She was somewhat emotional, but had no delusions. Cerebration was slow.

The voice had become harsh and rough. The pulse was from 80 to 88 to the minute. The temperature was subnormal, 96.5 to 97.8 degrees. The weight was 158 pounds. The urine varied from 650 to 890 c.c. in twenty-four hours, specific gravity of 1008 to 1015, and contained a trace of albumin, but no casts.

Clinical History.—March 20, 1895: Thyroid extract, gr. iss, t.i.d.

March 22: There was sweating of the palms of hands and also burning pains in the limbs. She was very despondent.

March 28: The pulse gradually increased in rate, averaging 95 to minute. The puffiness of the face was greatly diminished and there was no longer edema about the lids. She was much brighter and showed an interest in her surroundings.

April 1: The temperature was often above normal and the pulse rarely below 100.

April 4: She had lost 12 pounds in two weeks and then weighed 146 pounds. The physical and mental improvement continued steadily.

May 11: She was discharged, having further improved and having lost in all 21½ pounds in weight (136½ pounds) in the eight weeks following the administration of about 287 grains of thyroid extract. She was cheerful, the swelling and puffiness had all gone, and she was an entirely different woman. The amount of urine had increased after commencing the extract and often reached 1,000 to 1,300 c.c. Subsequent to her

discharge from the hospital Dr. Osler heard on several occasions that she had remained perfectly well, was bright and alert, and engaging actively in her former social and home duties. She still, however, was using at intervals the thyroid extract.

CASE 5.—*White, female, aged 39; tripara; typical picture; four years' duration; thyroid therapy; loss of 24½ pounds; recovery.*

Patient.—W. A., American, housewife, of Alabama, was admitted to the Johns Hopkins Hospital Feb. 20, 1896, complaining of "swelling of various parts of the body."

History.—Family history was negative for goiter or myxedema. Patient had measles and whooping-cough once each and pneumonia twice in childhood. She also had malaria in childhood and again at her thirty-fourth year. At her fourth or fifth year she had a swelling in the right side of her neck which finally broke down and discharged, leaving a cicatrix (tuberculous adenitis?). Menses were regular from fourteenth year to present illness. She had three children, the youngest of whom was 12; no miscarriages. She had swelling of her feet since birth of her first child, nineteen years before admission.

Present Illness.—Though for many years she had noticed "bloating of the feet," it only became pronounced when she was 35 years old, i. e., four years before admission. She thought that formerly the swelling occurred only in the spring time. This edema spread from the feet to the hands and eyelids. The eyelids were especially puffed in the morning. The skin was harsh and dry. At times the lips and tongue became so thick that she could hardly speak. The mind had been dull of late. The feet were constantly tired. Numbness and muscular cramps were all over the body. She was often very nervous. The menses became irregular and from her thirty-second year occurred only about once a year; she had not menstruated at all during the year before admission. The appetite was poor and the bowels were constipated. She got up once or twice each night to micturate.

Physical Examination.—Examination on Feb. 21, 1906, revealed a large framed woman of good color. There was marked pinkness of the cheeks in contrast to the excessive pallor about the eyes. The skin was extremely harsh and dry. There was a very marked puffy and edematous appearance of the face (especially about the eyes), the hands and also in the supraclavicular regions. The feet and legs gave the appearance of an enormous edema, but there was no pitting. The subcutaneous tissue had a peculiar resistant feeling.

The tongue was clean. The condition of the thyroid was not noted. The abdomen was full, but both the abdominal and thoracic viscera seemed normal. The pulse varied from 60 to 68 to the minute. The temperature was subnormal, 96.8 to 98 degrees. The weight was 240 pounds. The urine was 600 to 1,000 c.c. in twenty-four hours; sp. gr., 1,016 to 1020. It contained a faint trace of albumin on several examinations, but once only a few granular casts.

The blood examination revealed: Hb., 70 per cent.; red blood corpuscles, 4,232,000; white blood corpuscles, 3,600. The differential count was about normal, thus:

	Per cent.
Polymorphonuclear neutrophiles	70.5
Small mononuclears	17.5
Large mononuclears	9.5
Mastzellen	1.5
Eosinophiles	1.9

Clinical History.—March 3, 1896: She was given thyroid extract, gr. ss, t.i.d., which was increased to gr. ¾, t.i.d., on March 5.

March 7: There was a decided improvement in the condition of the skin of her hands, which was thinner and looser. The pulse rate was increased.

March 9: The patient had lost 10 pounds. She menstruated for the first time in one year. As, however, she was very nervous and hysterical, crying frequently and complaining of headache and pains in her back and limbs, the thyroid extract was omitted for twenty-four hours.

April 16: The improvement continued, the puffiness of the face and extremities disappearing, the facies losing their former dull apathy, and the voice becoming natural. The pulse rate also gradually increased to 88 to 100 for the minute, though there was little or no change in temperature. The hemoglobin rose to 80 per cent and the red blood corpuscles to 4,400,000. The quantity of urine showed no great difference, though occasionally amounted to 1,300 or 1,400 c.c. She was discharged, having taken 196 grains of thyroid extract and having lost 24½ pounds (215½ pounds) in eight weeks.

Subsequent History.—Oct. 6, 1905: A letter on this date from the patient stated that since discharge from the hospital her "general health had been very good," and she then weighed 170 pounds (i. e., a loss of an additional 45½ pounds). On one or two occasions she had slight returns of her previous affection, which, however, were relieved by the tablets, three of which she was using at the time of writing.

CASE 6.—White, female, aged 38; tripara; case of moderate severity; five years' duration; thyroid therapy; loss of 4 pounds in 16 days; recovery.

Patient.—M. W., American, housewife of North Carolina, was admitted to the Johns Hopkins Hospital, Feb. 17, 1903, complaining of "swelling of the body."

History.—Mother alive, but has symptoms resembling those of the patient. Maternal grandmother and uncle died of "kidney trouble." Patient had whooping cough in childhood and measles at 22. The menses were regular until the present illness. Was married and had three children, the youngest 7 years old. No miscarriages. Average weight, 140 pounds.

Present Illness.—Began at her 33rd year (1898) with a gradually developing swelling and puffiness of the skin, which was of general distribution and more marked at night than in the morning. The complexion became pale, sallow and yellow. Giddiness developed at the onset and persisted. It was present sometimes for half a day at a time, even when she assumed the recumbent posture. At first this giddiness occurred only two or three times a year, but has recently become much more frequent. Indigestion developed in 1901, but was unaccompanied by nausea or vomiting. The appetite was good. The bowels had been very constipated except for an attack of "dysentery" in 1901 and again in May, 1902, since which she steadily grew more edematous, especially about the eyes. She had constant "buzzing in her head" since October, 1902. The eyeballs became painful and very sensitive, and there were neuralgic pains in the back and legs. Weakness and dyspnea on exertion developed and gradually increased. The menses became irregular and scanty in 1901, but more recently became very profuse and the flow almost continuous.

Physical Examination.—Examination on Feb. 18, 1903, revealed a striking appearance. The face was swollen and had a curious puffy edematous character, especially about the eyes. Cerebration and speech were slow. There was slight puffiness of both hands and feet. The skin was harsh and dry and more or less sallow in color. There was no enlargement of the thyroid gland. The tongue was clean. The abdomen was slightly full and the bands of the ascending and descending colon were readily felt. The heart and lungs were normal. The pulse was rather small, 72 to 76 to the minute. Temperature was subnormal, 96.8 to 98.4 degrees. Weight was 138½ pounds.

The blood count showed: Hb., 62 per cent.; red blood corpuscles, 3,736,000; white blood corpuscles, 6,700. The urine varied from 540 to 840 c.c. in twenty-four hours; sp. gr. 1,010 to 1,016; trace of albumin and an occasional hyaline cast.

Clinical History.—Feb. 20, 1903: Thyroid extract, gr. v, t.i.d.

March 6: The tonsils were enlarged and the fauces were injected. The temperature rose to 99.2.

March 8: The temperature gradually reached normal, but the pulse rate was practically unaltered. She had lost 4 pounds during sixteen days.

March 15: The amount of urine showed a decided increase from the day after beginning the thyroid extract, averaging about 1,500 c.c. in the twenty-four hours, but occasionally reaching 1,600 to 1,700 c.c.

The patient was discharged, practically well, after having taken 345 grains of thyroid extract in the twenty-three days, and having lost further in weight.

CASE 7.—*White, male, aged 51; married twice; symptoms of moderate severity; six months' duration; thyroid therapy; loss of 4 pounds in six days; recovery.*

Patient.—A. M., Canadian, merchant of Quebec, was admitted to Johns Hopkins Hospital Nov. 29, 1903, complaining of "buzzing in head," "swelling of arms and hands," "coldness and numbness of feet," "catarrhal diarrhea."

History.—Family history was negative. Patient had measles and scarlatina in childhood, and neurasthenia in 1899. He had worked hard and constantly for years. His habits were good. He had married twice and had five children by first wife and none by second. His pulse had been slow for years, but never irregular before the present illness. The bowels were regular. His average weight was 185 to 190 pounds.

Present Illness.—In January, 1903, he first suffered from an attack of "catarrhal diarrhea," which had recurred at intervals. On July 1, after exposure to a hot sun while fishing, he first noticed a "buzzing sensation in the head like the sound of rapids." At the same time there was a sense of heaviness in the hands. On July 10 he noticed swelling of the face about the eyes. Three to four weeks later he suffered from cold and numbness of the hands and feet, which were slightly swollen. The swelling became more marked on the upper extremities as far as the shoulder joints. The skin of the hands and face was harsh, dry and inelastic. The voice became husky and "throaty," and the speech slow. There was constantly a peculiar flavor in the mouth. As the sclerotics and skin had a somewhat yellow tinge, he was treated for catarrhal jaundice. There was at times a sense of fulness below the heart, with periods of intermittent action of the heart. He had great difficulty in keeping himself warm, requiring a heavy undershirt and a hot water bottle at night. He had not attended to business since August, 1903, because of a disinclination for work and not because of any slowness of cerebration or loss of memory. He had consulted several physicians, who had always found his urine clear.

Physical Examination.—Examination by Dr. Osler on Nov. 27, 1903 (two days before admission) revealed a well nourished man, 5 feet 11 inches in height. The face was sallow, yellowish and waxy, and looked a little swollen. The eyelids were puffy and edematous as well as the skin above them. There was no special swelling of the ears. The skin was a little dry and hard. The hands were unusually dry, a little bluish and distinctly swollen. He thought that his right arm was a little swollen. The general surface of the skin of the body was unchanged except that it was a little dry and harsh. The pad above the left axilla was larger than above the right. His voice was husky. There was flattening in front of the trachea and no thyroid gland could be felt. The spleen and liver were both just palpable. There was no enlargement of the lymphatic glands. Cerebration was slow.

Nov. 29: On the day of admission, in addition to the above data, it was noticed that his expression was dull and facies heavy. The hair seemed normal. The gait was slow and he was deliberate in all his actions. The pulse was slow (45 to 52 to the minute), blood pressure was 100 to 110 m.m., hg.; the radial artery was sclerosed.

The temperature was subnormal, 97 to 98 degrees.

The blood showed: Hb., 70 per cent.; red blood corpuscles, 4,104,000; white blood corpuscles, 7,800.

The quantity of urine before treatment was 620 c.c. in twenty-four hours; the sp. gr., 1,011, and it contained neither albumin nor sugar, but a few hyaline casts.

Clinical History.—Dec. 1, 1903: Weight, 172 pounds. He was given thyroid extract, gr. v, t.i.d.

December 5: The amount of urine increased immediately after thyroid extract to 2,110 c.c. in the first twenty-four hours, to 4,025 c.c. in the second twenty-four hours. It always remained above 1,000 c.c.

December 6: The patient was discharged very much improved after having taken 90 gr. of thyroid extract, and having lost 4 pounds in the six days (168 pounds).

December 16: He returned to see Dr. Osler, who noted "a remarkable change in appearance; all the infiltration had gone from his face and eyes, though he still looked a little sallow. The face was no longer dry and the hands were not nearly so dry and not at all rough. The stomach was very much out of sorts, though the tongue was clean. The pulse was 82 to the minute.

Jan. 20, 1904: A letter from him stated that he continued to improve with the use of thyroid extract. His weight was 170 pounds.

Oct. 26, 1905: A letter on this date states that although he had not his former vim he was very well. He weighed 180 pounds without clothes. He had occasionally trouble with his bowels. He was taking daily one tablet of 5 gr.

CASE 8.—*White, female, aged 44; decipara; atypical case; thyroid therapy; improvement; edema never entirely disappeared.*

Patient.—A. F. L., American, no occupation, of Baltimore, consulted Dr. Osler Feb. 28, 1895, and complained of "swelling of the lip and face."

History.—Father died of "heart disease," otherwise family history was negative. Patient had always enjoyed excellent health. She had been married twenty-three years, and had ten children, six of whom were living. Ever since maturity there was a tendency to swelling of the feet, particularly at night.

Present Illness.—For a year or more before consulting Dr. Osler she had been getting pale. In August, 1894, she noticed that her feet and ankles were swollen, the left much more than the right; and more recently the left hand had seemed a little puffy. The legs were more swollen at night than in the morning. The face had been a little swollen and flabby for several months and the eyelids became edematous in the morning. She thought that she had gained slightly in weight. She did not complain of any susceptibility to the cold. She still perspired. For some time she had been very low-spirited and despondent. In August, 1894, she had a rectal abscess, which, however, left no fistula.

Physical Examination.—She had a pale yellow, very muddy complexion; the skin was dry, but there was no great puffiness of the eyelids nor had she the broad features so characteristic of myxedema. There were no folds of skin on the forehead, which showed a little brownish discoloration. The skin of the backs of the hands was dry and not especially puffy, but she stated that on the morning of examination the left hand was swollen. The neck was not swollen; there were no large supraclavicular pads. The thyroid gland could be felt. The legs were swollen, particularly below the calves. The circumference at the ankle was almost the same as in the upper part of the leg. The swelling was particularly marked about the malleoli. There was no pitting on pressure. There was no change in the voice. The pulse was 70 and not of increased tension. The temperature was 98.5 degrees. There was no optic neuritis or retinitis. The urine was not increased in amount, sp. gr. 1,017, and always contained a trace of albumin, but no tube casts.

Clinical History.—April, 10, 1895: The patient had taken thyroid extract gr. iii, t.i.d., for a month, before any change was noted.

June 15: The dose of the extract was gradually increased until she took gr. x, t.i.d. The legs became softer, less swollen, and very much smaller. She became thinner, the appetite was better; the dryness of the skin disappeared and she was in very much better spirits.

December 17: She was then taking gr. xx, t.i.d. Her physician, Dr. A. F. Morris wrote that "her intellect is not at all dull, and she is full of energy, and she says she feels stronger than she did." The legs swell, however, on cessation of the drug. Her limbs felt heavy and her feet warm and tingling. There was also some swelling above the clavicles and over the abdomen.

Sept. 27, 1905: Her physician again reported that the patient was enjoying good health, except for a severe lobar pneumonia in the winter of 1903, from which she made a good recovery. There was still some edema of the limbs, yet not enough to trouble her. Some time ago she had discontinued the use of the thyroid extract, after having taken it regularly for some years.

CASE 9.—*White, female, aged 55; quintipara; typical case; duration probably six to seven years; thyroid therapy; recovery.*

Patient.—I. K. P. H., American, no occupation, of Tennessee, consulted Dr. Osler Sept. 16, 1897, and complained of "weakness and swelling of face and extremities."

History.—No family history of goiter, myxedema or any neurosis.

Patient had always enjoyed good health, had been married thirty-one years, and had five children, all of whom were girls.

Present Illness.—She first noticed six or seven years before, weakness and tingling over the body, but chiefly on the left side. She then suffered from "sick spells" during which her color became yellow-brown, and there was numbness, weakness, and prostration. She next began to suffer with palpitation of the heart and feebleness and weakness became constant. During her fifty-fourth year (1896) she first noticed swelling of the face and extremities, though since 1890 or 1891 the face had looked "greasy and thick." On account of the latter one physician had treated her for erysipelas for six months. Later, the body became very much swollen; there was never diarrhea or uterine hemorrhage. For three months before consulting Dr. Osler she had taken thyroid extract, gr. v, t.i.d., with marked benefit.

Physical Examination.—Examination on Sept. 16, 1897, revealed an elderly woman with a very yellow anemic color. The face was not specially moon-shaped or infiltrated, though there was still a little fairly characteristic infiltration about the cheeks. The forehead showed remains of the former tension of the skin and she was unable to pucker up the forehead. There was no special pigmentation of the face. The tongue was clean. The neck was large and dark in color. The trachea was easily felt, but the thyroid was not palpable. There was no longer any infiltration over the trunk. The hands were a little suggestive, the skin being rather relaxed. There was marked infiltration of the skin of the left arm, while the dorsum of the left hand was also somewhat infiltrated. Further, on the palm of the left hand over the head of the metacarpal bone and first phalanx of the index finger, the skin was remarkably infiltrated and swollen, and she could not close the left hand well. The ankles were a little infiltrated, but did not pit on pressure. There was a remarkable degree of infiltration of the abdominal wall. There were no signs of any diffuse scleroderma.

Subsequent History.—Jan. 19, 1898: Her physician, Dr. C. P. Fox, reported that the patient was almost well.

Oct. 16, 1905: Her physician, Dr. C. P. Fox, wrote that she was in fair health, somewhat anemic, but showing no symptoms of myxedema except a slight scleroderma, principally about the hands and terminal phalanges. Temperature was normal and voice clear. Hair rather thin and dead looking. Mental faculties clear and memory good. Digestion regular. Urine has not contained any albumin. At one time she was troubled with an "irritable heart," due to excessive use of the thyroid tablets (gr. x, t.i.d.). She now takes gr. v, t.i.d.

Case 10.—*White, female, aged 29; primipara; typical case; duration two years; thyroid therapy; loss of 40 pounds in eight months; recovery.*

Patient.—M. L. A., American, no occupation, of New York City, consulted Dr. Osler Dec. 2, 1904, and complained of "swelling all over the body."

History.—Family history was negative except for the fact that her father and mother were first cousins. Patient had no serious illness until her twentieth year, when she had a severe attack of typhoid fever. She married at 21 and had one child, now 8 years old.

Present Illness.—This dated back two years. She rapidly became stout and within a year rose from 130 to 185 pounds. There were puffy swellings all over the body. There was one on the back of the neck which gradually disappeared. The hands became so swollen that it necessitated the filing off of her rings. Her feet became so swollen that she could not get her shoes on. The swelling of the body often prevented her wearing her corsets. Her hair fell out. She was always cold and could never get warm. She felt better in warm weather. She was always tired, and had no ambition or interest in anything. At times she felt restless. She became absent-minded and as often very melancholy. The menses were irregular and scanty. A diagnosis of myxedema was made by her physician, Dr. Edgar Smith, and she commenced thyroid extract, gr. v, q. d., in March, 1904, since which time the edema diminshed and she lost nearly 40 pounds (weighing in December but 137 pounds). She consulted Dr. Osler chiefly for the mental depression and absent-mindedness.

Physical Examination.—Examination revealed a healthy looking woman. The facies were no longer myxedematous. There was plenty of hair. There was neither pallor or pastiness of the complexion. There was, perhaps, a little puffiness about the eyes. She seemed bright and active. There were no pads above the clavicles. The neck was not full. The outlines of the sternomastoid and sternothyroid muscles were very marked. There was a distinct groove between the thyroid cartilage and the latter. No definite thyroid gland was palpable. There was no special puffiness of the hands, which felt warm, though she complained of being cold. Over the hips there was still a little puffiness and the skin was a little lax, but did not pit. Skin was nowhere dry. The heart sounds were clear, and the pulse regular and of good volume. A letter to the patient in October, 1905, was not answered.

AMERICAN SERIES.

I have collected from American literature from 1881 to July 1, 1905, 92 undoubted cases of myxedema. Some few others were not accepted owing to an insufficiency of the data or a probable error in the diagnosis. Many cases reported as myxedema were examples of cretinism, which with operative myxedema, are not included in the analysis. Two of my 10 cases had been previously reported, so that the entire American series includes 100 cases. The latter I intend to analyze for comparison with the other published series.

RACE.

By far the great majority of cases occurs in the white race. It is usually stated that "no cases have been recorded in the colored race," yet in America, E. E. Maxey,[19] in 1895, reported a typical case in a negress. H. J. Berkely,[20] in 1897, reported 8 instances of localized myxedema-like deposits in the scalp of 8 colored patients in Baltimore. As the latter were not instances of true myxedema, only Maxey's case was included in my series. Hence there was an incidence of but 1 per cent. in the colored race. More recently (1905), instances of the disease in the natives of British India have been reported by Hamilton, Hope and Smith.[21]

NATIONALITY AND LOCALITY.

Myxedema occurs most frequently in cold climates, and is probably more frequent in Europe than in any other continent. Of the European countries, Great Britain produces the majority of the cases. In England it is more prevalent in the north and especially in the lower banks of the Tyne valley. It seems to be still more common in Edinburgh and Dundee in Scotland. The London committee found that of 76 cases, 26 were from England, 5 from Scotland, 2 from Ireland and 15 from France, of which 11 were from lower Brittany. In Germany and France the disease is rare. Of my series of 100 cases, 16 patients were stated to be of foreign birth (English 5, Scotch 3, Irish 2, German 3, Austrian 1, Polish 1, Italian 1). Of the remaining 84, 19 were stated to be American-born and an absence of note to the contrary in the other 65 may lead one to assume that they were also of American birth. Hence 84 per cent. of my series were presumably born in America.

As to the distribution of the disease in America, the data are rather inadequate. In only 31 cases was the

19. Med. Sentinel, Portland, Ore., 1895, iii.
20. Am. Jour. Insanity, 1897-98, liv.
21. Indian Med. Gaz., Calcutta, 1905, xl.

locality definitely stated. Of these one patient had developed the disease in England and another in Poland. Of the remaining 29, 11 were reported from Canada or the northeastern states (Ontario 2, Quebec 2, Nova Scotia 2, Vermont 1. Massachusetts 1 and New-York 3); 4 from the Middle West (Michigan 2, Wisconsin 1, Indiana 1); from the West (California 2, Colorado 2, Kansas 1, Idaho 1); and 8 from the South (Maryland 3, Virginia 2, North Carolina 1, Tennessee 1, Alabama 1). In 69 other cases though the locality of the patient was not stated, that of the physician may give some clue. In the group 56 cases were reported by northern physicians, 10 by western and 3 by southern.

Hence it would appear from a study of both of these groups that in America, myxedema is widely distributed, though apparently more prevalent in the northeastern districts. I say apparently, for one must allow for the greater population and the greater facility for observation and publication in the northeast. It is of interest to note that Dock is quoted by Messinger[22] as having commented on the rarity of myxedema in Michigan, although other diseases of the thyroid gland are common there.

Since I began the study of my cases H. C. Moffitt has stated that he believes that diseases of the thyroid gland are more common in California than in many other states in America. He collected 83 cases from California, of which 53 were from San Francisco. He found myxedema was more common in the "bay counties" of California which, however, were the most densely populated.

SEX, AGE AND SOCIAL STATUS.

It has long been recognized that females are more prone to the disease than males. The London committee collected 94 females to 15 males (6 to 1). In 150 cases, Hun and Prudden[10] found 113 females, 32 males and in 5 the sex was not stated (3.5 to 1). In 370 cases Murray gave a much higher proportion, viz., 322 women to 48 men (7 to 1). In my series there were 86 women, 13 men, and one case in which the sex was not stated (6.6 to 1).

As to age it has been found that no period of life, from infancy to extreme old age, is exempt. The cases before puberty do not interest us here. The London committee found that the first symptom of the disease manifested itself in the third to fifth decade in 49 of 84 cases.

Hun and Prudden's[10] tables (which unfortunately include cretins) show that the average age at onset was 38 years in 76 women, and 42 years in 20 men. In 274 cases Murray found that the disease developed between the fortieth and forty-fifth year in women and from the thirty-fifth to the fiftieth year in men. My table shows the preponderance of both sexes in the fourth and fifth decades. In one male the disease first appeared at the advanced age of 68 years. In 12 females the age at onset was betwen 50 and 60 years, and there was no patient over 60. On the other hand in a large proportion of females (13 of 87 females or 15 per cent.) the disease occurred between 20 and 30 years, in contrast to an incidence among the males for the same decade of 1 out of 13 cases of 7.6 per cent. Hence we may say that the disease is relatively more frequent in women from 30 to 60 and in men from 30 to 50.

Decade.	Males.	Females.	Total.
15-20 years.....	1	1	2
20-30 years.....	1	13	14
30-40 years.....	4	26	30
40-50 years.....	4	29	33
50-60 years.....	1	12	13
60-70 years.....	1	..	1
Not stated	1	6	7
Grand total	13	87	100

The social condition plays but a minor role as an etiologic factor. The London committee thought that the lower classes were most prone. In the American series the status of the patient was usually not given, yet it is interesting to remark that 9 of the 10 cases from this clinic were treated in the private wards.

FAMILY ANTECEDENTS AND HEREDITY.

Unquestionably there is a thyropathic tendency in certain families. In other words the disease may be transmitted directly from either parent, but more commonly from the mother. Again several members of the same generation may be attacked. Thus in the London series in 2 of the recorded cases the patients were sisters, in 2 they were relatives, while in one the father and in another the mother in all probability died of the disease. In other words there is a family history in 6.6 per cent. Hun and Prudden refer to one family in which 3 sisters had myxedema, one of whom had a daughter with the disease. Altogether they had 9 cases (16 per cent.) with a family history of myxedema and there was direct transmission in 8 per cent.

In my series some mention is made of the family history in 68 cases. Of these 8 had a history of myxedema in the family (11.8 per cent.), which, however, includes 2 of Hun and Prudden's[10] cases. Exclusive of the two latter, one woman had a brother die from myxedema and one sister living with slight myxedema. In another case a woman had an aunt and a cousin with pronounced myxedema. Another woman had a sister with myxedema, still another with a myxedematous mother; while the patients in cases 1 and 2 of my personal series were sisters, who had a third sister die with exophthalmic goiter. In the American series there was another woman whose mother presumably had myxedema. It is possible that consanguinity in the parents may predispose to myxedema. There are practically no statements as to this factor in the reported cases, but in the two cases in which this point was inquired into in my personal series it was found that in Case 3 the parents were second cousins while the grandparents were first cousins and in Case 10 the parents were first cousins. It would be interesting to get more data on this question. The London committee also include neuroses and tuberculosis as predisposing causes. Thus in 12 of their series of 16 per cent, in 13 cases or 25 per cent. of Hun and Prudden's[10], and in 8 cases or 11.8 per cent. of my series there was history of insanity or other neurosis. As to tuberculosis, there was a history of phthisis in the near relatives of 20 patients (28 per cent.) of the London cases, in 9 (17 per cent.) of Hun and Prudden,[10] and in 10 (14.7 per cent.) of my series.

PERSONAL ANTECEDENTS.

The usual antecendents of chronic maladies, viz., alcohol and syphilis, play little or no part. In the London series there was a history of syphilis in 6 and intemperance in but 8 of the cases. Hun and Prudden[10] found a history of syphilis in 3, while in my American series there was a history of syphilis and alcohol in 2 cases each. In women myxedema bears some relation to the marital state. Of 81 cases in which this point is noted only 10 of the patients were single. Repeated and

22. Trans. Mich. Med. Soc., 1894, xviii.

rapid child-bearing, according to most authorities seems an important predisposing factor. In the Hun and Prudden[10] series of 64 cases in which a statement is made in regard to the number of pregnancies, 4 patients were nulliparæ and the other 60 were multiparæ, having borne on an average 5 children. In the London series 62 of the 69 patients were married women who had borne children and 14 were single; 16 had given birth to 8 or 9 children each. Of the 71 married women in my series there is no statement as to the number of children in 22; of the remaining 49, 6 were nulliparæ, 3 had one miscarriage each, while 40 had one or more children with an average of about 5 children each. Fourteen women had six or more children, two of whom had 12 each. Five of my series and 15 of that of Hun and Prudden[10] dated the onset of myxedema from their last pregnancy. In 6 of Hun and Prudden's and in one of my series the onset occurred directly after a severe puerperal hemorrhage. It has been suggested that the menopause may also play some part. In only three of Hun and Prudden's cases, and in but one in my series was it definitely stated that the disease commenced at the menopause, although in a number of other cases it occurred about that time. Thus in 7 of my series the menopause preceded the onset of the disease. As myxedema is most frequent in women between the ages 40 and 45, the usual age for the menopause, atrophy of the thyroid gland and with it myxedema may have some fairly constant relation to changes in the menstrual function.

Of other possible predisposing factors mental shock and worry must be considered. There was a history of this in 27 of Hun and Prudden's series and in 18 cases of mine. The acute infections, except in so far as they may be associated with or followed by a thyroiditis and subsequent atrophy, can be left out of reckoning. In one case there was a history of glandular inflammation of the neck with subsequent atrophy of the thyroid gland. In another case a severe attack of malarial fever just antedated the onset of symptoms. In short we may say that excessive child-bearing and mental shock and worry may play no inconsiderable rôle in the etiology.

RELATION OF GRAVES' DISEASE.

I believe that a history of exophthalmic goiter preceding the onset of myxedema would be more frequently elicited if more careful inquiry were made. In three of the American series (of which one was Case 2 of my series) there was a definite history of Graves' disease preceding the onset of myxedema, 3, 10 and 14 years, respectively. Baldwin,[23] in 1895, reported 4 instances of myxedema following Graves' disease in from 2 to 5 years. Of further interest is a case reported in 1893 by Maude[24] of a woman with myxedema whose daughter had Graves' disease. Moffitt[17] refers to a similar case. In my series two sisters (Cases 1 and 2) had myxedema one following exophthalmic goiter while a third sister has since suffered from exophthalmic goiter. Both myxedema and Graves' disease have a special hereditary tendency of their own. That of the former has been referred to under the family history. That of the latter may be illustrated by the fact that in 5 of 40 cases collected by MacKenzie there was a family history of the disease. Osterricher reported the case of an hysterical woman who had 10 children, 8 of whom had exophthalmic goiter, one of whom in turn had 4 daughters with the same disease.

23. Lancet, 1895, i.
24. St. Barts. Hosp. Rep., 1893, xxix.

MORBID ANATOMY AND PATHOGENESIS.

The morbid anatomy of this disease has been fairly well studied. In my American series there were 5 autopsies, all fairly completely reported.

THYROID GLAND.

The thyroid gland, on the disease of which myxedema depends, is diminished in size and loses its dull reddish tint of health, becoming yellowish or pale. Occasionally the gland is increased in size, but in such cases is functionally inactive. A delicate fibrous tissue invades and replaces the proper glandular tissue. There is a small-celled infiltration of the walls of the vesicles, accompanied or shortly followed by epithelial proliferation in the vesicles themselves. Next the gland becomes converted into a delicate fibrous structure in which clumps of small round cells, evidently the remains of vesicles, are scattered. In the last stage the capsule is much thickened, while the parenchyma of the gland is made up almost entirely of fibrous tissue in which small islets of round cells are sparsely placed. There is also an end arteritis and periarteritis resulting in a diminution of the lumen of the vessels. Ord[25] writes:

> It appears to me that probably the atrophy of the gland productive of myxedema is frequently due to inflammatory destruction of the gland tissue.

The process is analogous to that in cirrhosis of the liver or kidney. There was atrophy of the gland in all five of the American postmortems.

SKIN.

The skin on section yields no serous exudate, but remains unaffected and jelly-like. Histologically there is nuclear hyperplasia and development of connective tissue, both of which changes occur chiefly in the neighborhood of the sweat and sebaceous glands and around the hair follicles. The epidermis may be atrophied and the lymph channels dilated. Sometimes there is an unusual interval between the bundles of fibrous tissue of the corium as found in ordinary edema. There is usually an endarteritis of the cutaneous vessels, but the nerves are generally unaffected. In the sweat and sebaceous glands the epithelium becomes swollen and later the nuclei proliferate and the lumen of the tubule becomes occluded. The hair follicles are surrounded by fibrous tissue which sooner or later contracts and causes atrophy of the roots. These changes, then, account for the loss of the hair and the diminution or absence of the secretion of sweat and sebum.

NERVOUS SYSTEM.

According to the Clinical Society's report, there is no important change in the central nervous system. Boyce and Beadles found a central endarteritis in one case of myxedema associated with insanity, and in addition a colloid material in many of the vessels and perivascular spaces. Cushier[26] found thickening of the vessels of the spinal cord and atrophy of the cells of the anterior cornua in one case. The hypophysis cerebri was found enlarged in 2 cases of myxedema by Boyce and Beadler and in 1 case by Ramsey Hunt.[27] An explanation of the origin and mechanism of the production of the nervous manifestation has been sought for by various authors. Hadden[28] believed them to be due to a contraction of all the peripheral lymphatics owing to a disturbance of cer-

25. Allbutt's "System of Medecine," v.
26. Arch. of Med., New York, 1882, viii.
27. Am. Jour. Med. Sci., 1905, cxxix.
28. "Brain," 1882, v.

tain centers seated probably in the medulla and acting through the sympathetic system. Clouston[29] ventured the following hypothesis:

The neuroglia of the cortex becomes to a slight degree waterlogged by mucin, which causes lowered anabolism and catabolism of the cells, whose reactiveness is thereby impaired.

The majority of writers, however, ascribed the nervous symptoms to the padding of the peripheral nerve endings by the myxedematous deposits which so interfere with the transmission of the afferent impulses that the central structures suffer secondarily by virtue of the defective afferent conduction. The most modern conception is the toxic theory, according to which there is an absence of the thyroid secretion, which is either itself essential to metabolism or neutralizes otherwise toxic products of metabolism.

HEART.

The heart frequently shows hypertrophy of the left ventricle in association with a slight fibrosis in the kidneys. There is a remarkable discrepancy between the symptoms of cardiac insufficiency in myxedema and postmortem degeneration of the myocardium. Slight atheroma of the large vessels was found in more than half of the London series.

KIDNEYS.

The kidneys have been enlarged in some cases owing to the presence of large quantities of a transparent or faintly granular material which interferes with the renal tubules.

CHEMICAL ANALYSIS.

A chemical analysis of the tissues will reveal an increase in the amount of the mucin in the skin, connective tissue, tendons, etc., especially in the stage of marked tumefaction, though not to the same extent as was first maintained. Hun and Prudden[10] found a normal amount of mucin in the skin in one instance, and they did not believe that the mucin is so invariably increased as to justify the name myxedema. In the later or atrophic stage there is no apparent excess of mucin. The excess of mucin results from the degeneration of the protoplasm of the epithelial cells, of the goblet cells of the mucous membrane and of the cells of the acini of mucous glands. The mucin forms a constituent part of the ground substance or stroma of the connective tissue in which the cells and fibers are buried. It is a muco-albuminous material of which one of the constituents is mucin, the other a proteid of the globulin class resembling the paraglobulin of the blood.

SYMPTOMATOLOGY.

ONSET.

The onset, as a rule, is very insidious. Several months or even a year may elapse before the symptoms are definite. For this reason it is often difficult to determine the duration of the disease. In a few cases, especially in young adults, the symptoms develop rapidly and become marked in a few weeks. A case reported by Osler[30] is a good illustration of this. The disease in a man, 31 years old, ran an acute course of 5 months with myxedematous symptoms associated with tachycardia, glycosuria, melena, mania and death.

The first symptom, as a rule, is languor. The ordinary daily duties become an effort, if not actually burdensome. Then a constant chilliness or perhaps merely a greater sensitiveness to cold than formerly may be noticed. Slowness of motion and increase in bulk make their appearance. Hun and Prudden[10] found that when the disease did not commence insidiously, it usually commenced with some nervous or cutaneous manifestation.

SOLID EDEMA.

This is the most characteristic symptom and that from which the disease derived its name. The edema is best developed in the loose subcutaneous tissues and is very slight where the skin is firmly adherent to the underlying structures. The edema has certain definite characteristics; it is sold and firm, does not pit on pressure, is not affected by gravitation, nor when pricked does it exude fluid unless a watery edema be also present. Hun and Prudden[10] explain the absence of pitting in myxedema by the fact that the edema is confined to the superficial layers of the corium where the interspaces are so small and the interlacement of the fibers so fine that the fluid is not easily driven away by pressure.

The swelling in the majority of cases is first detected in the face, though the London committee thought that the legs and feet were most frequently the primary seat of the swelling. Sooner or later the edema becomes general, with a consequent increase in the size and weight of the body. There was increase in both bulk and weight in 46 of 50 cases in the London series. In the American series there was a definite statement as to the weight in 30 cases, of which 27 showed an increase, 3 of 100 pounds or over, 3 of 50 pounds or over, 4 of 25 pounds or over, and only 1 under 25 pounds. In 16 cases no exact figures were given. In 3 cases there was some loss of weight. The edema may vary from time to time under differences of temperature, being greater in cold than in warm weather.

The Face.—The face is most frequently involved; thus in our series it was edematous in 91 cases, of which the eyelids alone were affected in six. In only one case was the face noted to be unaffected. The features are broad, puffy and coarse. The eyelids are sites of transparent swelling, often described as "translucent folds," with drooping of the upper lids, to overcome which the eyebrows are arched in a peculiar fashion. The nostrils are swollen and broadened. The lower lip is thickened, everted and livid. The mouth is widened transversely. There is also a well-defined hectic patch over the cheeks and nose in sharp contrast with the pallid orbital regions. There is great diminution in the mobility of the features, giving rise to a very characteristic facial expression. The latter may be best described as "heavy," "apathetic," mask-like," "stolid or cretinoid." The solid edema obliterates the special character of the individual features, resulting in a strong family resemblance between all cases of myxedema. Ord,[31] in 1898, tritely remarks that "the total effect is that of a mask of sorrowful immobility." The effect of the edema of the face is so characteristic that once seen will never be mistaken for anything else, and is as pathognomonic as the facies of cretinism. In my series there were the characteristic facies in 93 cases, in 36 of which the hectic flush was also noted. In the great majority of the 93 cases the description was in identical terms, and in only a few were such general terms as "cretinoid," "myxedematous," "mask-like," etc., used. The neck is considerably increased in circumference so that the ordinary collar feels uncomfortably tight. In 18 of my series it was enlarged in 2 cases, of which the edema was

29. Jour. Mental Sciences, 1894, xl.
30. Johns Hopkins Hosp. Bull., 1892, iii.
31. Brit. Med. Jour., 1898, ii.

chiefly confined to the back of the neck, and in one of the latter it was so great as to tilt the chin forward on the sternum.

On each side of the neck above the clavicles are large soft projections, of dough-like consistency, consisting partly of fat, altered connective tissue and possibly in part of veins. These supraclavicular pads are similar to those seen in cretinism. Hun and Prudden[10] found them present in 90 per cent. of their cases. They were noted only in 25 of my series, though their absence was commented on in but two others.

Hands, Feet, Etc.—The hands are uniformly affected, being broad, clumsy and "spade-like"—a term first suggested by Gull. The fingers are swollen and moved with difficulty. The hands alone were involved in 47 cases. In several cases the fingers were said to be clubbed, and in one case the finger points were described as enlarged. In another 27 cases the entire upper extremity was attacked, though usually the edema is most pronounced in the forearms. The feet and legs may be similarly affected, as was noted in 57 of the American series. Slight watery edema of the skin, though not uncommon, is usually transitory and when persistent is certainly accidental. Pitting of the leg was noted in 7 of the series and in another 20 its absence was commented on. The extremities, too, are usually cold, often purple and livid. The abdomen is not uncommonly swollen and pendulous (27 cases in my series), due of course, rather to infiltration of the walls than an actual ascites. The navel may protrude as it does in cretinism, though the low position of the navel is not the rule. The genitals are sometimes involved in the process (2 cases). The entire trunk may be the site of the firm edema (10 cases), and, in fact, the edema may be general over the entire body (13 cases). In addition, there may be localized areas of infiltration of considerable size. Thus in one case a large tumor was present in the middle of the thigh.

CUTANEOUS SYSTEM.

The skin and its appendages show marked and characteristic alterations, which increase with the progress of the disease. The skin itself is most frequently involved, being abnormal in 95 of the 96 cases in my series (99 per cent.). In 4 other cases no comment was made on the condition of the skin. It is usually dry and harsh to the touch, owing to the dimnished activity of the sudoriferous and oftentimes the sebaceous glands. In fact, sweat may be entirely absent, as was the case in 27 per cent. of my series. Desquamation often occurs in the form of a fine powder over the face, trunk and extremities. Sometimes the skin is desquamated in larger flakes, or even almost entire casts of the fingers or hands. The latter is more commonly seen following thyroid therapy. In early or mild cases the skin may be moist, smooth and otherwise normal except for a little puffiness and loss of elasticity.

The color of the skin, more particularly of the face, is usually altered. It may be merely sallow, gray or more often yellow. The skin was noted as yellow in 13 of Hun and Prudden's[10] series, as well as in 13 of mine (13.5 per cent.). This may be so deep as to be mistaken for actual jaundice (two cases). Areas of pigmentation are by no means infrequent, especially about the face and neck, as occurred in 12 cases in my series and in 5 in Hun and Prudden's. The areas may be small and deep yellow (chloasma) or they may be large and irregular and consist merely of a yellowish brown stain. In one of my series actual bronzing was noted. Warts and moles were relatively frequent and occurred in 4 cases of my series and in 12 of Hun and Prudden's.

Various forms of rashes occur, as erythemata (2 cases), vesiculi (2 cases), urticariæ (2 cases) and herpes (1 case). More serious inflammatory conditions may develop, as ulcers (1 case) and phlegmonous erysipelas with gangrene (2 cases). Pruritus was present in one case without evidence of diabetes. Lineæ atrophicæ may be conspicuous. The hair is very commonly diseased, as was the case in 72 of 77 cases (93 per cent.) in my series. Hun and Prudden[10] noted loss of hair in 86 per cent. The usual indications of defective nutrition of the hair may be present, namely, falling out, dryness and coarseness, brittleness, a loss of luster or change in color. More commonly the hair of the scalp, axillæ and pubes is affected, but the eyebrows and eyelashes may become very thin, or even be entirely lost. More rarely there is loss of hair of the entire trunk, extremities and chin. Sometimes a crop of lanugo-like hair will devlop. The scalp itself is often dry, scurfy and brown with many cracks in the epidermis. The nails may also show defective nutrition. They were diseased in 32 of 37 cases (86 per cent.) in my series, in 21 of 44 of the London series (47 per cent.) and in 10 of 13 of Hun and Prudden's series (70 per cent.). They are usually brittle and ridged and longitudinally striated. They may be stunted, discolored or abnormally curved. In two of my series there was actual clubbing of the fingers. While more commonly the nails of the fingers alone are affected, those of both the fingers and the toes or even of the toes alone (3 cases) may be diseased.

TEETH AND MUCOUS MEMBRANES OF MOUTH.

The teeth are frequently diseased. In 18 out of 20 cases (86 per cent.) of my series they were noted as either loose, brittle, carious or as having fallen out, while in Hun and Prudden's[10] series they were loose or lost in 64 per cent. and decayed or brittle in 28 per cent. The mucous membrane of the mouth and lips is frequently swollen and pale and very apt to be bitten during mastication. The lips are often enlarged (19 cases), everted and pendulous, and may be of a dark purplish or violet hue. More commonly the tongue is enlarged, swollen and hypertrophic (42 cases), often to such a degree as to interfere with speech. Rarely it protrudes from the mouth as in cretinism. It may appear anemic or more rarely purplish in color. The soft palate is sometimes swollen and will then hang down on the tongue; its mobility may be considerably impaired. The mucous membrane of the nose does not escape. One patient in my series consulted a rhinologist for nasal obstruction due to a myxedematous condition of the nose. The gums are often spongy and soft and recede from the teeth. They often bleed very easily and may be ulcerated. They were noted as abnormal in 18 or my series. With the involvement of the buccal mucous membrane there is frequently salivation (13 cases), more especially at night or when asleep. The saliva often runs out of the corners of the mouth, giving to the patient the facies of an idiot. Sometimes the mouth is very dry, with even total loss of the salivary secretion. Hun and Prudden[10] found the mucous membrane of the mouth was swollen in 95 per cent. and anemic in 47 per cent. The larynx also may be pale, swollen and edematous with separation of the cords and consequent hoarseness. The larynx was involved in 4 patients of my series, two of whom first consulted a laryngologist who in both instances made the diagnosis

of myxedema. Hun and Prudden[10] found anemia of the larynx in 70 per cent., swelling in 56 per cent. and lack of approximation of the cords in 56 per cent. The nasal mucous membrane may present a similar picture as the other mucous membrane (2 cases). The frequency of rhinorrhea or nasal discharge (6 cases) would suggest a more usual involvement of the nasal mucous membrane. The conjunctivæ sometimes do not escape (3 cases) and lachrymation is not infrequent (5 cases).

(To be continued.)

THE DIAGNOSIS AND TREATMENT OF MALARIAL FEVER.

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The object of this paper is to lay emphasis on the accurate diagnosis of malarial fever, to review at some length the various conditions often ascribed to an infection with the malarial parasite, and to consider some points in the therapeutics of this malady.

DIAGNOSIS.

Blood Examination.—By this means only can a positive statement as to the presence of the malarial organism be made. The technic involved is certainly very simple and, as a rule, it is not a difficult matter to demonstrate the parasite in either the fresh preparation or in a blood film stained with any of the good eosin-methylene blue mixtures. In this connection I should like to lay some stress on the importance of the careful examination of the fresh blood, which can be done very readily, provided a clean slide and coverslip be used and a very small drop of blood be taken, thus insuring a thin, well-spread field. The pigmented forms are easily recognized and should not be confused with any structures found in normal blood. The pigment granules are fine and dark-brown in color, while the granulations of the leucocytes are more or less refractile. The eosinophile granules are much larger, round and regular in outline and not as dark as the pigment in the parasites. The plasmodium, of course, is regularly contained within the bodies of the red blood cells, although a few extracellular forms are often seen, due to the rupture of some of the cells in making the preparation. It is not uncommon, however, especially in malaria, for the leucocytes to contain small particles of pigment which they have ingested by their phagocytic action. Such cells should be recognized, of course, by their general structure, containing, besides the pigment, a nucleus and the refractile granulations. The beginner may be somewhat misled by small clumps of platelets with radiating strands of fibrin, the so-called "granular masses of Schultze," but these do not resemble at all the hematozoa. The crescents and ovoids of the estivo-autumnal fever are very characteristic and are readily recognized when seen, but they do not appear in the peripheral circulation until the fifth to the seventh day of the disease. The demonstration of the young hyaline forms, best found just after a chill, is more difficult, but in a tertian infection attention may often be drawn to a corpuscle containing the parasite by the fact that it is swollen and larger than those surrounding it. The recognition of the hyaline forms is rendered uncertain, except to the eyes of a well-trained observer, by the occurrence of the endoglobular degenerations which are invariably present sooner or later, depending on the condition of the blood and the mechanical insult offered the red blood cells in making the preparation.

It is generally stated that the parasites are most easily found in stained films, and this is undoubtedly so if they are few in number, but this should not discount the general value of the examination of the fresh blood. In stained specimens care must be taken not to confuse the platelets, which are usually numerous in malaria, with parasites, especially when they are superimposed on red blood cells or are gathered into clumps resembling somewhat a segmenting form. Small particles of sediment or detritus from the staining solution often have a blue color and may contain granules of dirt resembling pigment. These can be differentiated from the parasite by the absence of the small red-staining chromatin body. Certain cases of malaria in which the parasites are so few in number as to be missed in the ordinary examination may sometimes be recognized by the method suggested by Ross. For this, thick blood smears are made, so that a good many layers of blood corpuscles are superimposed one on the other. After drying in the air, they are carefully immersed in clear water until all the hemoglobin is dissolved out. They are then fixed and stained in the ordinary manner. The crescents of the estivo-autumnal fever stand out prominently, but the other smaller forms of the parasites would be lost among the mass of leucocytes present. The laking of the blood may be hastened by employing a dilute solution of acetic acid, e. g., 0.5 per cent., and afterward neutralizing with a weak solution of ammonia water. The best time to study the blood is just before a chill, as it then contains the adult pigmented forms which are the easiest to recognize.

The leucocyte count in malarial fever shows a normal or decreased number of these cells. This is a most important point in diagnosis and serves at once to differentiate this disease from many conditions associated with a remittent or intermittent temperature curve. In 82 recent cases of estivo-autumnal fever at the Johns Hopkins Hospital[1] the mean leucocyte count was 3,500 per cm., with only seven cases above 10,000; and in tertian infection the mean count was 4,500 in 70 cases, with five above 10,000. It is almost impossible to lay too much emphasis on the value of a leucocyte count in all cases of fever, as it immediately places the case in one of two groups, thus eliminating a large number of possible conditions which, like malaria, may be accompanied by chills and an irregular fever. A leucocytosis may occur in the paroxysms of pernicious malaria, in certain rare cases of malarial hemoglobinemia, and with the occurrence of complications.

The differential count of the leucocytes, while possibly not so instructive, is often most suggestive. In malaria there is a pronounced increase in the relative number of the large mononuclear cells, with a diminution in the number of small lymphocytes and the polymorphonuclears. Of late, much importance has been attached to these facts, especially in certain cases of probable malaria in which prolonged search has failed to demonstrate the plasmodium. Delaney[2] concludes that an increase in the proportion of the large mononuclear cells from the normal 1 or 2 per cent. to or beyond 12 per cent. is highly suggestive of malaria. Krauss,[3] of Memphis, has reported the findings in 204 cases in which the average proportion of the large mononuclears was

1. Emerson: "Clinical Diagnosis," J. B. Lippincott Company, 1906.
2. Brit. Med. Jour., March 28, 1903.
3. THE JOURNAL, Oct. 22, 1904.

19.5 per cent., while that of the small lymphocytes was 14.8 per cent., and he lays particular emphasis on the relative increase of the large over the small mononuclears. The mean average in a large number of cases at the Johns Hopkins Hospital, as given by Thayer,[4] is 16.9 per cent. of large mononuclears. These cells may also be increased in typhoid fever (after the second week), measles, syphilis, and possibly in influenza, but not to the same extent as in malaria. Of course, an adenopathy must be excluded. It is not safe to rule out typhoid fever when the malarial variation is found, especially when the disease is of some duration, but in a gradually developing fever the absence of a marked increase in the large mononuclear cells during the first week speaks against malaria and suggests typhoid fever. A differential count of the leucocytes is not a difficult procedure and, in fact, can be done at the same time that one is searching for the plasmodium in a stained blood smear by counting and classifying the white cells as one goes over the field.

The anemia of malaria is of some importance in diagnosis, as it is an early symptom, and in severe estivo-autumnal infections there may be a destruction of 1,000,000 cells per cm. in one paroxysm. The regeneration of the cells is rather rapid, and in the tertian and quartan types the count may be restored before the next rigor, and the anemia only occur after a long series of chills. The hemoglobin suffers more than the red cells and returns to normal more slowly.

Therapeutic Test.—"An intermittent fever which resists quinin is not of malarial origin," Osler. Numerous clinical experiments have demonstrated that the tertian and quartan forms of the parasite are peculiarly susceptible to the action of quinin, and a common experience in my hospital service has been to put a stop to all subsequent chills by the administration of ten grains of quinin four or five hours before an expected chill. Of course, it does not prevent this chill, but the drug is in the blood in sufficient quantity to destroy most of the young hyaline forms produced by segmentation at the time of the paroxysm. The estivo-autumnal type of infection is more resistant to the action of quinin and it may require three or four days to sweep most of the organisms from the blood. That this form of malaria is quite amenable to treatment, however, is well demonstrated by Carter's[5] experience with over 200 cases of estivo-autumnal fever in the canal zone at Panama. His patients are given thirty grains of quinin a day and show an average duration of fever of 52 hours and an average stay in the hospital of five days. Next to the examination of the blood, the therapeutic test offers the most convincing proof that the disease at hand is malaria, and if the symptoms do not promptly abate with the proper exhibition of this drug one may be certain that he is dealing with a condition other than malarial fever. It is true that doubt may arise in mild cases of some of the maladies mentioned below from which the patient recovers from the rest in bed and the general measures employed in spite of the quinin!

SYMPTOMATOLOGY.

The clinical forms, as given by Osler, include: first, the regularly intermittent fevers, the tertian and quartan types, with the quotidian fever, due to a double infection with the tertian organism; second, the irregular, remittent, or continued fever, the estivo-autumnal type, which may be combined in a double infection with the tertian parasite, and, indeed, cases are on record in which all three forms of parasites have been demonstrated; third, pernicious malarial fever, which is always associated with the estivo-autumnal parasite, and fortunately quite rare in temperate climates. It is in this form that one meets with the real "congestive chill" or "yellow chill" and occasionally with hemoglobinuria; fourth, malarial cachexia, characterized by anemia and an enlarged spleen, the result in cases frequently exposed to infection over long periods of time and not thoroughly and energetically treated.

DIFFERENTIAL DIAGNOSIS.

There is rarely any doubt in one's mind when dealing with the regularly intermittent fevers. The acute onset without prodromal symptoms, the sharp rigors occurring with remarkable regularity, and the prompt disappearance of all symptoms on small doses of quinin give rise to a clinical picture that is at once appreciated. The estivo-autumnal infection, however, may run its course without definite paroxysms or may assume atypical forms and is most often diagnosed as typhoid fever. Experience in many cases at the Johns Hopkins Hospital have shown that it is impossible to distinguish these cases without a blood examination. It should be emphasized that this form of paludism is not at all uncommon in this climate, and it is of the utmost importance to recognize it. Pernicious malaria, in which thrombi of parasites may occur in the cerebral or mesenteric vessels, causing the so-called comatose and algid forms of the disease, may pass as meningitis, uremic coma, dysentery, yellow fever, or even Raynaud's disease (case with superficial gangrene). Malarial cachexia must be differentiated from pernicious anemia, leukemia, splenic anemia, Hodgkin's disease with splenic involvement, etc. It is only by a thorough study of the blood that the diagnosis can be reached in these atypical cases, and the discovery of a single crescent will give indication for most vigorous treatment.

The error is more often made on the other side, however, and the number of human ills placed in the category of "malarial fever" is legion. As a result, the municipal health is jeopardized by the infectious diseases that fail to be recognized, precious time is wasted in establishing the proper course of treatment for the case, the unfortunate patient is dosed with cinchona *ad nauseam*, the prognosis is in doubt, and naturally both the victim and the physician are dissatisfied. It is with some of these conditions that this paper has to deal. They are chiefly as follows:

Typhoid Fever.—That this disease is frequently diagnosed as malaria must be apparent to anyone who looks into the statistics as to the cause of death published by various health boards throughout the country. One reads with astonishment in the U. S. Census Report for 1890 that in Brooklyn the deaths from malaria for the preceding six years aggregated 1,413, while only 1,002 deaths were attributed to typhoid fever during this same period.[6] At the same time Brooklyn was credited with having a remarkably low death rate from typhoid fever. Now, any reasonable physician must admit that a death from malarial fever is a rarity north of Mason and Dixon's line, and much the same may be said of this locality. A study of the conditions in Richmond, however, is very interesting. The reports of the health de-

4. Johns Hopkins Hosp. Rep., vol. v.

5. Dr. H. R. Carter: U. S. Marine-Hosp. Service, personal communication.

6. Osler: Med. News, Nov. 23, 1895.

partment in this city for the twenty years ending 1905 give the following total number of deaths as turned in for these two diseases:

Typhoid fever.....768 fatal cases
Malarial fever.....282 fatal cases

Thus there were more than one-third as many deaths reported from malarial fever as from typhoid fever. In addition, during these same twenty years there were 79 deaths reported as due to "intermittent fever" and 29 fatal cases of "remittent fever." Add these to the number of fatal cases of malarial fever and we have a total of 390 deaths ascribed to malaria, intermittent and remittent fever, or more than half the number of fatal typhoid cases. As an evidence that these statistics are not the work of a passing generation of physicians, but are dependent equally on the diagnostician of the present day, it might be well to cite the record of Richmond's health board for the one year 1905, which shows:

Typhoid fever.....28 fatal cases
Malarial fever .....24 fatal cases

Such figures as these would seem to make it imperative, as some writers have previously suggested, that our health boards examine very closely into all deaths reported as due to malarial fever.

Failure to recognize a case as typhoid fever may be due to the occurrence of chills, which, it must be remembered, are not uncommon in this disease. In the first place, typhoid fever may set in with shaking chills. This happened in 13 out of the 79 cases treated at the Johns Hopkins Hospital during the year 1894.[4] In two cases there were several severe rigors; in three cases there were two, while in eight the rigor was single. Chills may also occur[4] at the onset of a relapse; as a result of treatment, especially following the use of antipyretics; at the onset of complications, as pneumonia or femoral thrombosis; and chills may be present throughout the course of the disease associated with sweats, the so-called sudoral form. How often may chills be due to a concurrent malaria? This brings up the question of typho-malarial fever as a clinical entity, which will not be discussed in this paper. Suffice it to say that the health board reports for Richmond show the return of 215 fatal cases so diagnosticated from the years 1887 to 1900, inclusive. After 1900 all cases reported under this head have been included under typhoid fever in accordance with the International Classification of the Causes of Death, adopted in that year. It is not to be denied that these two diseases may co-exist in the same patient, as was shown by Gilman Thompson[7] at the meeting of the Association of American Physicians in 1894, as in his cases the parasites were actually demonstrated in the blood. These cases must be excessively rare, however, as Osler[8] reports 829 cases of typhoid fever in which examination of the blood revealed the plasmodium only once.

Typhoid fever at its height is a continuous fever, and the temperature curve rarely shows daily variations of more than a degree. Malarial fever, on the other hand, is marked from the outset by remissions of a grade not seen in the early weeks of typhoid. Say what one will, however, estivo-autumnal malaria may simulate enteric fever very closely, and it is just in these cases that the diagnostic importance of a blood examination comes in. The practitioner should be able to exclude malaria, and in most states there are city or state laboratories where a specimen of blood may be sent for a Widal test. A reasonable reliance may be placed in the therapeutic test, but if distinct results are not produced at the end of a week it is worse than useless to continue dosing the patient with quinin. Dr. Osler[8] expresses it admirably when he says: "Learn to suspect typhoid fever, and not malaria, in every case of fever of six or seven days' duration, particularly if it resists the action of quinin. For too long you have employed the Anglo-Saxon method of procedure, and in a given case have assumed innocence of anything so serious as typhoid until in the onset of some serious symptom the guilt was only too evident. It is high time now that you adopt the Gallic usage, and regard every case of continued fever as guilty, that is as a typhoid, until the contrary be clearly demonstrated."

Pulmonary Tuberculosis.—Fever is often the initial symptom in pulmonary tuberculosis, especially in the more acute cases. It is either remittent or intermittent, continued fever being unusual except in some cases of tuberculous pneumonia. The similarity between the temperature curves of phthisis and malaria is sometimes very striking. Not long ago there was a young woman under my charge with acute tuberculosis of the lung whose daily variation in temperature was over seven degrees—96 to 103—for nearly two weeks. Special emphasis should be laid on the fact that tuberculosis may set in with shaking chills, fever and sweats, and combined with this there may be few, if any, physical signs. In such cases consumption may not even be suspected until at the end of several weeks, during which time the malady and perhaps the patient have been quite refractory to large doses of quinin, a beginning cough or even an hemoptosis may put the practitioner on his guard. On the other hand, malaria may be accompanied by a pretty marked bronchitis, and a distressing cough may take the place of the chill, as in a recent patient of mine, during the paroxysms. So in many cases the correct diagnosis can be reached only by a careful examination of the blood and sputum.

Pyelitis.—Infections of the pelvis of the kidney, as well as certain other inflammations of the genito-urinary tract, are probably more often mistaken for malarial fever than any other condition. The insidious onset without pain or local symptoms, the characteristic intermittent or remittent temperature line and chills occurring with peculiar regularity, all suggest malaria most strongly. The rigors in such cases are probably associated with a temporary blocking of the ureter-drain either by a calculus or by inflammatory products, as the urine during the fever may be clear and free from pus, while at the termination of the paroxysm turbid urine loaded with pus is voided. It seems very strange that these forms of pyelitis associated with fever rarely cause any symptoms even when the disease is extensive. Palpation may reveal an enlarged and tender kidney, but not necessarily so. In contrast to malaria there is usually a leucocytosis of moderate degree, 12,000 to 20,000, the blood does not show the plasmodium, while one or two urinary examinations usually puts one on the right track.

Chills and high fever following urethral instrumentation is an exceedingly interesting condition, not often, however, confused with malaria, as it occurs soon after the local manipulation. Chills and intermittent fever may ensue on the passage of a renal calculus.

Septicemia and Pyemia.—Originating not infrequently from an insignificant focus, which may not be

7. Trans. Assoc. Am. Phys., vol. ix.
8. Osler: N. Y. Med. Journal, Nov. 4, 1899.

discovered, these serious conditions pursue a course closely resembling malarial fever. While septicemia has often but one initial chill and then runs a more or less continuous fever simulating typhoid, which in itself is a septicemia, pyemia, on the other hand, has as its cardinal symptoms irregular fever, chills and sweats. The diagnosis of these infections from malarial fever is almost always suggested immediately by such a simple measure as a leucocyte count which shows a distinct increase in the number of colorless corpuscles. Of course, every means should be employed to locate, if possible, the initial lesion. Cases following a wound, surgical operation or child-birth are readily recognized, but the process may originate in the tonsil or accessory nasal sinuses, may follow gonorrhea or a prostatic abscess, or occur in several of the following conditions which, because of their importance, are taken up separately.

Acute Endocarditis.—Under the title, "The Pseudomalarial Types of Infective Endocarditis" Coleman,[9] in an excellent article, shows a good many temperature charts illustrating the following pseudomalarial curves: double quotidian, quotidian, tertian, quartan, and mixed types. He cites several illustrative cases, states that the paroxysms may be identical with those of malarial fever, presenting cold, hot and sweating stages, with fever-free intervals, in which the cold stage may be accompanied by a prolonged, hard chill. As is well known, an acute process may attack the heart valves and give rise to no physical signs or symptoms until broken compensation ensues. In both malaria and acute endocarditis the long-continued hemolysis results in the deposit of pigment in spleen, liver and bone-marrow so that postmortem it is unsafe to attempt to distinguish malaria from septic processes merely on the gross or microscopic appearance of pigment in the viscera. This author concludes that the only reliable method is the demonstration of the malarial parasites in cases of this disease and their absence in septic processes. In nearly all other respects the pathologic anatomy of pernicious malaria may be closely reproduced by septicemia.

Liver Abscess.—Suppuration within the liver is most frequently secondary to amebic dysentery, but may follow traumatism or occur as a part of a general pyemia, or as the result of foci of suppuration in the territory of the portal vessels. As regards symptoms, the hepatic abscess may be entirely latent, but as a general rule there is pain associated with fever and an enlarged liver. The temperature is usually intermittent and rigors are not uncommon, which, associated with the sweating, form a clinical picture not unlike malaria. In the case of the amebic abscess the patient may give no history of dysentery,[10] but a careful examination of the feces generally reveals the protozoön. The blood does not show the malarial parasite, but may exhibit an eosinophilia, Billet[11] having reported 32 cases in which this was a constant feature. Most of his cases showed from 5 to 12 per cent. of eosinophiles, with one case running as high as 47 per cent. My experience does not entirely confirm this, as my notes on 14 differential counts in cases of amebic dysentery occurring recently in the wards at Johns Hopkins show that the eosinophiles were less than 4 per cent. in seven, and the case with the highest number had only 9.8 per cent. Amberg[12] found a slight eosinophilia in some cases of amebic dysentery in children, in others none. As a rule, there is an increase in the number of leucocytes in abscess of the liver, but a certain proportion of the cases fail to show it,[10] so that absence of leucocytosis does not aid in the differential diagnosis.

Gall Stones.—One form of cholelithiasis so frequently simulates malaria as to be worthy of special notice. This is obstruction of the common duct with the stone lodged in the diverticulum of Vater and exhibiting a ball-valve action. This is apt to give rise to ague-like paroxysms, chills, fever and sweating, the so-called hepatic intermittent fever of Charcot. I have seen several such cases giving a history of intense rigors over periods of weeks and months with more or less irregularity, fever often mounting to 103 or 104, that had been treated continuously with quinin, in which Dr. Halsted operated and confirmed the diagnosis of stone in the common duct. The most careful search failed to reveal any malarial organisms in these cases. The patients all showed more or less jaundice which had been considered in the light of the icteroid tint so frequent in severe malaria. The pain in these conditions, while sometimes severe and colicky, does not always occur. A careful consideration of all the symptoms, the deepening of the jaundice after each paroxysm, the presence of bile in the urine and the absence of the plasmodium in the blood should lead one to the correct diagnosis.

Among other diseases that may run irregular and intermittent fevers should be mentioned the severe anemias, leukemia, and especially Hodgkin's disease in which periods of pyrexia may alternate with periods of normal temperature, or there may be a daily rise of three or four degrees, sometimes with a chill and sweat. The fever in the early secondary stage of syphilis may assume marked intermittent character and this may also be said of the fever in certain instances of malignant disease. In children, milder forms of osteomyelitis, when not attributed to "growing pains," are often ascribed to malaria,[13] and when a child is brought to us with limp paralyzed extremities how common it is to have the mother tell that the whole trouble began with an attack of malaria, when the acute symptoms were really the onset of an anterior poliomyelitis. These conditions, and possibly many others, are treated as malaria and will continue to be so diagnosed until the practicing physican realizes that malaria is a real clinical entity, with a well-known and easily found causative agent and with an antidote that is a specific in every sense of the term if properly exhibited.

TREATMENT.

The subject of prophylaxis will not be dealt with in this paper except in so far as it applies to the individual patient. In all well-directed hospitals every patient whose blood harbors the malarial parasite is covered at night with a mosquito net, at least during the months that the anopheles are present. Were this not done ward infections would not be infrequent owing to the habits of this mosquito, which does not migrate, but tends to spend its whole existence within the radius of a few hundred yards. This insect bites only at night, and a mosquito bar is not an inconvenience and we would all do well to insist that one be provided in each individual case we treat. If it were possible to isolate every case of malaria, including the instances in children that are only too often unrecognized, the disease could be quite eradicated.

In the treatment of the individual case emphasis must

9. Coleman: Am. Jour. Med. Sci., March, 1905.
10. Osler: Med. News, April 12, 1902.
11. Comp. Rendus, Soc. de Biol., Paris, lviii, No. 18.
12. Bull. Johns Hopkins Hosp., December, 1901.
13. Johnston: Trans. Am. Surg. Assoc., 1904.

be laid on the following points: 1. The quinin must be absorbed and enter the blood. 2. The drug must be administered until every parasite is destroyed. 3. The patient should remain in bed until the temperature reaches normal and remains normal.

In order that the quinin be absorbed there are two essential features to which attention may be directed: 1. The patient's alimentary tract should be in a condition to favor absorption. To this end the bowels must be unloaded by means of a good dose of calomel or blue mass, followed by a saline. The diet should consist of soft, easily digested foodstuffs, and as long as there is fever liquid diet alone is preferable. 2. The quinin must be given in a soluble form. In this connection I should like to cite briefly a rather remarkable case that came under my notice a couple of years ago. A man was brought into the hospital in a state of collapse whose blood presented an extreme picture of pernicious malaria, nearly every other red cell containing one or more parasites. He died in a few hours in spite of heroic treatment, and at the autopsy was found an ischio-rectal abscess which contained in its pocket-like recess a very large number of quinin pills which had passed through the intestine without being at all dissolved. Such an experience as this is certainly striking enough to condemn forever the administration of quinin in pill form. Undoubtedly the surest way to give quinin is in solution with a mineral acid, e. g., quinin sulphate 5 grains, dilute hydrochloric acid 5 minims, water to 1 dram. It is not very palatable, although the acid seems to offset somewhat the bitter quality of the quinin, and I have always found that patients take it without objection. The drug may be administered in powdered form in soft gelatin capsules, but it is not an uncommon experience to have them pass entire from the rectum. The solubility of the quinin when given in this form is aided by following the dose in a few minutes by 10 minims of dilute mineral acid. The best indication we have that the quinin is absorbed is the subjective sensation of ringing in the ears, and if this is lacking we may feel quite sure that the quinin is not in the blood except possibly in certain unusual cases of idiosyncrasy in this regard.

The necessity of giving quinin for a definite period after the fever and symptoms have disappeared is not always sufficiently appreciated. This fall I have had several patients brought to me who gave a history of chills and fever five or six weeks previously, who had been given quinin for a few days which caused the symptoms to abate, but they have never felt quite well since, complaining chiefly of periodic headache, malaise and occasional chilly sensations, and on examination the blood still showed the plasmodium. A good general procedure in the handling of ordinary cases is the following: 5 grains of quinin every four hours, or 20 grains a day, for the first five days; then 2½ grains every four hours, or 3 grains three times a day, for two and a half or three weeks. In severe cases larger amounts may be given, 30 to 40 grains daily. It is generally advisable to give one large dose, 10 or 15 grains, five hours before an expected paroxysm, and if this is done there is usually sufficient quinin in the blood to destroy most of the young hyaline forms that are produced by segmentation during the chill. But if a case is seen directly after the rigor and another is not expected for two days I much prefer to start the quinin at once as it is undoubtedly true that a certain number of parasites are destroyed by the quinin while still contained within the red corpuscles[14] and the succeeding paroxysm is much modified. Let it here be again emphasized that quinin is a specific in malaria, that if it enters the blood in sufficient quantity the fever should disappear in a few days, certainly within a week, and I doubt very much if it is possible under these conditions for malarial fever to run as long as thirty days, a remark that is sometimes heard. Dr. Carter's communication, already mentioned, touches directly on this point, as in over 200 cases of estivo-autumnal fever treated in the canal zone at Panama the average duration of fever was only 52 hours in this severe type of infection.

In pernicious malaria every means should be employed to get the quinin into the circulation as quickly as possible. The drug must be given hypodermically—or, rather, intramuscularly—or even intravenously, and may also be given by the rectum. Tyson objects to the hypodermic method, stating that he has had to abandon it on account of the frequency with which it is followed by abscess formation. Undoubtedly quinin is very irritating to the tissues, but if the precaution is taken of injecting it deeply into the muscles and not simply under the skin, abscess formation is less often encountered. At least, this has been the experience in Panama,[5] where this method is frequently used. The bimuriate of quinin, or the bisulphate of quinin and urea, are the two preparations most frequently used. These methods of administering the drug are dealt with in most textbooks on the subject.

The necessity for absolute rest in bed while actively combating the infection must be apparent to anyone who has tried the simple experiment of treating an ordinary case of tertian malaria by this means alone without the use of quinin at all. While by no means the best way to kill off the parasites, yet it is surprising to see what Nature can do when aided by rest, diet, care of the bowels, and general hygienic measures. It is very certain, however, that the rest plus the quinin is more efficacious than either alone.

Appropriate means should be employed during the paroxysms to make the patient as comfortable as possible—blankets, hot water bottles and possibly a hot whisky-and-water. The judicious use of morphia is often indicated, especially if there is much gastric disturbance. A tepid sponge or an alcohol rub is appreciated during the sweating stage.

The post-malarial anemia is best treated with some form of arsenic. I usually prefer Fowler's solution, running up to 10 or 12 minims three times a day, provided the patient takes it well. Some prescribe a combination of iron and arsenic in pill form. If there is any indication to continue quinin, such a tonic as the syrup of iron, quinin and strychnin phosphate may be given.

The whole question of the treatment of such a common disease as malaria is so simple if attention be directed to certain important details that this fact is probably the very reason we turn out so many students from our medical schools each year with only a hazy idea of the subject.

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Sudden Death in Apparently Healthy Infants.—C. J. Bartlett of Yale states, in *Yale Medical Journal*, that in cases in which an apparently well nourished baby dies suddenly without evident cause, he always expects to learn that it has been fed on condensed milk or some baby food in place of cow's milk, and that he is not usually disappointed.

14. Craig: Am. Med., Apr., 1906.

NUTRITIONAL DISTURBANCES IN INFANCY DUE TO OVERFEEDING.*

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That overfeeding in infancy is apt to be followed by indigestion is a universally recognized fact. The term, however, usually suggests the giving to an infant of a food that is too rich in one or more food elements, or that is unsuitable to age and conditions, or that is given in too great variety and at too short and irregular intervals. We have not been sufficiently impressed with the fact that even an appropriate artificial food and one properly adapted to the individual case, can give rise to the profoundest nutritional disturbances when given in quantities that exceed the actual economic needs of the infant. In this discussion the term overfeeding will be used in this restricted sense, the giving to an infant of too great a total quantity of good, clean, fresh, unexceptionable, properly modified cow's milk, usually, but not necessarily, at too short intervals.

Continental writers have emphasized the danger of overfeeding in this sense for many years. Biedert was among the first to teach a doctrine of minimum feeding (*Minimalnahrung*), which called for the smallest amount of food necessary to insure perfect development with normal increase in weight. This most desirable minimum daily amount of food he placed at from 150 to 200 grams of fluid per kilogram of body weight, this amount to contain about 80 calories.

Heubner determined along metabolic lines the number of calories, per day, per kilogram of body weight, necessary to insure proper development in normal breast-fed babies. This so-called energy quotient he found to be about 100 from the third week to the end of the sixth month; a gradually diminishing amount after that time to about 80 or 85 at the end of the first year. He established 70 as the approximate energy quotient necessary to maintain a weight equilibrium.

Clinical observations, each extending over many months, have been made on breast-fed infants by Feer, Beutner, Budin, Schlossman, Nordheim, Czerny and Keller, Reyer and others, that have all confirmed rather closely the figures set down by Heubner, so that these can be used as a standard.

Budin of Paris uses a simpler measure. He feeds all of his babies "especially after the fifth or sixth month, or better, weighing 6 or 7 kg., one-tenth of their body weight daily of pure, sterilized, undiluted milk," and claims to have no symptoms of the overfeeding against which he warns so emphatically.

In this country, through the teachings of Rotch, Holt and their followers, we have come to think of nutritional needs and overfeeding rather in terms of percentage than of amount. Certain standards are set up as guides to the strength of food a child should receive, and these naturally find expression in more or less elastic tables of percentages of different food elements adapted to average healthy infants at various ages. Weight is given comparatively little significance, and for conditions other than normal we have most indefinite data.

To Czerny and Keller we are indebted for a symptomatology of overfeeding that, in its totality, is new and original, and is so clean cut and palpable that it alone can serve as a real guide to determine when proper amounts are beginning to be exceeded. Their exhaustive and truly scientific work[1] that has appeared only in part has placed the whole subject of infant feeding on as firm a foundation in reason and scientific investigation as that on which any other department of medicine stands. Finkelstein has put it none too strongly when he says: "When in the future we shall speak of the attainments of scientific pediatrics, Czerny and Keller's work will be placed first, and everyone who wishes to occupy himself in a scientific manner with the problems of infant feeding must find his foundations there." I wish to acknowledge that this paper and our own recent work in infant feeding has been, in a large measure, inspired by this work, and especially by the chapter on *Milchnärhschaden,* a term perhaps most briefly and fully translated by the title of the present paper; a chapter in which they picture a definite and convincing symptom-complex resulting from overfeeding.

For some time we have recognized and studied this clinical picture; we have also, during that time, calculated energy quotients in all of our feedings and have been much impressed by the results. It seemed to me additionally instructive to study our old cases in this light. I have, therefore, recently gone over the histories of our old cases at the Northwestern University Medical School, as well as over my own private cases, to see what our past habits have been with reference to overfeeding, both from a calorimetric and a clinical or symtomatic standpoint, and from this, if possible, to make a deduction as to the prevalence of overfeeding under present conditions in this country.

Our conditions have been rather favorable for such a study. In practically all of these cases we have a complete history of the exact amount of certified milk or cream, of definite strength, that was used, together with the exact weighed amounts of other ingredients used in the mixture. Our weight record, on our own scales, is quite complete, and the rest of the history as to bowel movements, disposition, etc., sufficiently so for this purpose. In nearly all cases the foods were prepared at the diet kitchen—always individually for each case. We have, then, all the necessary data for calculating approximate energy quotients. We have considered the caloric value of 1 ounce of 4 per cent. milk at 21; 1 ounce of 16 per cent. cream at 54; 1 ounce of skimmed milk at 10; 1 ounce of sugar at 120; 1 ounce of cereal water at about 3. It is a simple matter, then, to multiply the number of ounces of each ingredient in the twenty-four-hour food by its caloric value, to add the products, divide by the number of pounds the baby weighs, and multiply the result by 2 1/5 to reduce from pounds to kilos. The end product is the energy quotient. By caloric value is meant the number of large calories, the latter being the universally recognized unit of measure of food value as expressed in terms of heat production and representing the amount of heat required to raise 1 kilogram of water from 0 C. to 1 C.

The dispensary babies were fed by a number of different instructors connected with the department of pediatrics. Until recently we all used the percentage method. We have, however, gradually come to look on fats with that feeling of caution that pervades our own literature (Holt, Southworth, Jacobi, etc.), and I believe that all of us fed considerably under the usual amounts rather than above them, especially of fat. In the last year most of us have stopped using cream altogether and have used only milk dilutions with the addition of carbohydrates. I believe, then, that I can assume that our

* Read before the Chicago Medical Society, Nov. 28, 1906.

1. Des Kindes Ernährung, Ernährungsstörungen und Ernährungstherapie.

conditions were representative, or at least not an exaggeration, of what is being done in this country by those who use these methods only.

I was convinced before looking over our records that overfeeding was a factor in our results, but after studying them, *I am positive that, in our past, overfeeding has been a factor in the production and maintaining of nutritional disturbances in infants that towers above all others.*

It seemed impossible to tabulate these cases and have the results of any more value than are general statements, so I have not attempted it. As far as calorimetric overfeeding is concerned, according to Heubner's standard, it can safely be stated that all of our cases were overfed ultimately, except those that were, at the time, suffering from some acute disorder. By overfeeding is not meant simply the exceeding of Heubner's energy quotient of 100, but rather using energy quotients of 120, to 150, to 200—in one case, fed by a physician not connected with the dispensary, who had had peculiarly valuable experience in infant feeding by the percentage method, an energy quotient of 330 was given for two weeks.

SYMPTOMS OF OVERFEEDING.

As to symptoms due to overfeeding, it can be said with equal certainty that they were present in the great majority of our babies, at some time, during the period that they were under our care. So typical and uniform are these symptoms that we associate with overfeeding that they form a clean-cut, easily recognized clinical entity. Individual cases differ from the well-marked type only in the number and the degree, rather than in the character of the symptoms, that make up this symptom-complex. Many of our cases gave only a few slight manifestations of trouble that had little or no bearing on the general condition of the child; in others there was every evidence of the profoundest nutritional disturbance.

An infant that is overfed becomes restless, often most strikingly shown by broken and restless sleep at night. At the same time it becomes constipated in a very characteristic manner; the bowel movements that were yellow in color and were soft and moist, become pale gray, hard and dry, will not mix with water, and are of the color and consistency of putty—so that they will roll from the diaper without leaving it soiled. The odor is strong and suggests decomposition. The urine has commonly a strong ammoniacal odor and easily produces irritation of the skin.

At the same time it is noticed that the child gives evidence of a fundamental disturbance of nutrition. It becomes pale, its tissues lose their tone, the abdomen becomes soft and moderately distended with gas. The child becomes less active; it plays less. A striking symptom, often the only one that gives any concern to one not familiar with this picture, is a failure to gain in weight on the same food, or a greater quantity of food, that up to this time has produced normal or even abnormal gain in weight. Still more striking is the fact that a continuation of the same amount of food, or of an increased amount, will regularly produce, not only a stationary weight, but after a time, a steady loss in weight. A further increase in food may again produce a temporary gain, often a large one, but it only makes surer and quicker the ultimate loss in weight.

OTHER RESULTS OF OVERFEEDING.

If this course is persisted in one of two results will follow: The child finally presents the picture of atrophy or marasmus. This we see, not rarely, in the pale, constipated, marantic baby that gives the history of having had a stationary weight, or steady loss in weight, for months, in spite of the fact that it has taken enormous quantities of cow's milk and has had no diarrhea or evident digestive disturbance.

The other result is the acute gastrointestinal catastrophe that may occur at any time in this course, and that is characterized by vomiting, diarrhea, prostration, loss in weight, often by fever, and, usually, by the inability to take more than the smallest amounts of cow's milk, sometimes for many weeks. This condition we have seen more commonly in weaker children, with poorer digestion, especially in those who were rapidly or excessively overfed; while in more robust children, with better digestion, in whom the overfeeding was a more gradual process, though excessive, there has been more of a tendency to the typical chronic course outlined above. In weaker children one often sees one catastrophe follow another, especially in hospital cases, the only progress being made during the period of low feeding generally recognized as necessary after such an upheaval; while in the stronger children the severest symptoms of overfeeding may be present for months before such a catastrophe occurs, if it occurs at all.

In many of these more chronic cases there is evidence of rickets, with the train of nervous symptoms that accompanies that disease. Two other symptoms very frequently appear at some time during the period of overfeeding. One of these, eczema, has been very frequent in those of our cases that have shown other well-marked symptoms of overfeeding, especially the characteristic constipation. It varies from the small, rough, reddish spots in the cheeks that are so well known, to the most extensive and intractable involvement of the cheeks, forehead, scalp, chest and back, and other parts of the body.

The other symptom alluded to is anorexia. Loss of the normal keen appetite of infancy, so that the child needs to be coaxed to finish its bottle, is very common in these cases that are well marked, but a refusal to take more than an ounce, or even less, at a time, is characteristic only of the graver cases, and then often forebodes a catastrophe. We have come to look on this symptom as due to overfeeding in practically all cases in infancy in which there is not some other evident acute, or chronic disorder. There is at present at Wesley Hospital a child of 17 months weighing 16 pounds in whom an increase of food from 26 ounces of milk, 10 ounces of barley water, 1 oz. of cane sugar, to 30 oz. of milk, and 6 oz. of barley water produced in one day a florid eczema of chest and back, spreading later to the cheeks and scalp, and within five days, loss of appetite, restlessness at night, fever and constipation, with hard, dry, gray bowel movements.

While most of our babies gave some evidence of overfeeding, and many of them had well-marked manifestations, such as constipation, pallor, restlessness, eczema, stationary weight, etc., there were very few in whom the final outcome was wholly bad. The ultimate picture of marasmus, of course, came to us in its finished state and was never produced by us. Some of our cases showed undoubted rickets, although under satisfactory control throughout. In general, we considered our results excellent. In some cases this was due not so much to our methods as to the fact that these cases can often stand a surprising amount of overfeeding. While many of our cases did well for weeks and months on energy quotients

of 150, many gave evidence of serious trouble on those of from 110 to 120 or even less. Since calculating energy quotients in all of our cases we have seen few, if any, cases that required over 100, and we have usually regretted it if we have exceeded that "unsurpassable amount" (Heubner). In general, we have found the energy quotients of from 100, at the beginning, to 80, or less, at the end of the first year, as a wholly satisfactory working basis as to the approximate amount of food a child should get.

FAT THE DISTURBING ELEMENT.

There seems little doubt that the disturbing element in this condition is the fat of cow's milk, and that its non-digestion, non-assimilation and the resulting disturbed intermediary metabolism are the cause of this train of symptoms. Outside of the negative evidence that proteids and carbohydrate and salts can not produce this picture, there is very positive evidence that fat does. The characteristic dry, hard, pale bowel movement has been found to consist largely of the insoluble salts of the fatty acids (*Seifenstuhl*). If the amount of fat is increased all symptoms are increased. If the fat is sufficiently diminished, and the other food elements are left undisturbed, or increased, there will be rapid improvement. No other result in infant feeding is more striking than the mathematical certainty with which the dry, gray bowel movements of these infants, no matter what their ages, are replaced by characteristic smooth, nearly odorless, curdless, brown, salve-like bowel movements, when they are fed straight, undiluted skimmed milk—a food that is nearly fat free, but contains the maximum amount of proteids and carbohydrates. Nor is the general improvement less certain than that of this one symptom.

The immediate cause of this condition is probably an acidosis (Czerny and Keller), as shown by increased excretion of ammonia in the urine. This is due to the fact that alkalies are withdrawn from the body by the fatty acids produced in the intestines and to satisfy the normal acid products of metabolism ammonia is called on.

The following three cases may be cited as typical cases of overfeeding, in which the percentage method was used:

CASE 1.—Baby F., well developed, strong, healthy baby. Birth weight, 9 pounds 12 ounces. Maternal nursing alone for three weeks, with severe indigestion and considerable loss in weight. After the first month fed artificially on cream and whey mixtures; later on cream and milk. At four months weighed 13 pounds 8 ounces. At five months weighed 13 pounds, a loss of 8 ounces in one month. During this month the child had received a food mixture containing fats 3.6, proteid 2.0, sugar 7.0. Seven feedings of 5 ounces each were given at three-hour intervals. The energy quotient here was about 116. It did not take the food well and would often leave one or two ounces of a 5 ounce bottle. Child was rather pale and thin, but muscular and active. Cranio-tabes well marked. Bowel movements were pale yellow and somewhat dry and offensive. During the fifth month a sudden severe diarrhea occurred, with from twelve to fifteen green bowel movements a day. It was put on barley water for a short time and milk, later cream, was slowly added. Baby now took food eagerly and after the initial loss due to diarrhea and hunger diet, gained one pound in two weeks. Soon began again to refuse to take all of the 5 ounces of food, so the food was made more concentrated: Fat 4, proteid 2, sugar 7.5; the number of feedings was kept the same, as also was the frequency and the amount. The energy quotient now was about 137. Child became rather constipated, the bowel movements were pale, greenish yellow, and offensive, but it gained 20 ounces in eighteen days on this stronger food. Two weeks later there was no gain in weight, the bowel movements were dry, pale and offensive, the baby was pale, and refused food more and more. Finally it would take only an ounce or two at a time, and was losing in weight. In three months it had gained only 1½ pounds. The mother then, on her own initiative, fed the child potato, bread and gravy, porridge, cracker, soup, etc., and stopped coaxing her to drink milk, the child soon taking less than a pint a day. There was immediate improvement. The child was happier and slept better, bowel movements became normal, and the child gained a little over a pound a month for four months. At eleven months the child weighed 19 pounds. Still rather thin and pale, but marked improvement over former condition. Only very slight evidence of rickets.

In this case the most serious results of overfeeding were avoided by the mother unconsciously meeting the two therapeutic indications, decreasing the milk and increasing the carbohydrates.

CASE 2.—Baby B., weight 11 pounds at birth; maternal nursing insufficient. Was rather underfed for two months, with stationary weight; for the next four months it gained steadily about 6 ounces a week on cream and milk mixtures. During the last two months of this time the child was badly constipated, one or two hard, dry, smooth, pale yellow bowel movements a day, offensive in odor. Eczema was first noticed about this time on cheeks, and later about the ears, then on the forehead and scalp, with one or two small spots on the body; it was variable in intensity. Child always rather pale, but very active and a good baby. During this time the food had a percentage never stronger than, fat 3.6, proteid 2.0, and sugar 6.5, but the energy quotient was from 160 to 165. The cream was diminished and the milk increased so that at nine or ten months the child was practically on about 40 ounces of whole milk, with the energy quotient under 100. Weighed 19 pounds at nine months, and the general condition was excellent. The eczema, which in this case was the chief symptom, had slowly disappeared, and was practically gone at nine months.

CASE 3.—Baby O., a typical case with all the classical symptoms, weighed 7 pounds at birth, was wet-nursed five months, when it weighed 16 pounds 4 ounces. Had been on milk and cream mixtures since then. At seven months the food mixture consisted of fat 3.0, proteid 1.5, and sugar 6.0, with an energy quotient of 86.

At eight months the child weighed 18 pounds and the food mixture was: Fat 4.0, proteid 2.0, and sugar 7.0; the energy quotient being 128.

At nine months: Fat 4.0, proteid 2.8, sugar 6.0, with energy quotient 130.

At ten months: Fat 4.0, proteid 3.0, and sugar 6.0; energy quotient 130.

At eleven months the child weighed 18 pounds 14 ounces—a gain of 14 ounces in three months; the energy quotient was 128.

When one year old the child weighed 19 pounds 8 ounces. The food was milk 40 ounces, sugar 1 ounce, with an energy quotient of 108. During the last few months this child has had no acute illness. Has been out of doors almost constantly. Bowel movements have generally been rather dry, grayish, often nearly white and offensive, typical *Seifenstuhl*. Has had slight eczema for some months, especially recently; is rather pale, does not drink well, and often leaves an ounce or two of food. When thirteen months old, had for several days refused bottle more and more, and finally would not take it at all. The eczema was well marked, and vomiting and diarrhea now set in. Baby was put on barley water for eight days, then milk was added slowly to 40 ounces. At sixteen months of age the child weighed 20 pounds 10 ounces, a gain of 10 ounces in two months. In the last few months the child had taken a daily mixture of milk 40 ounces, sugar 1 ounce, in addition to some carbohydrate food, granos, flaked wheat, etc. During the greater part of this time the stools had been hard, light-colored, and dry.

The child at sixteen and one-half months was rather pale, the anterior fontanelle measured 1 inch across, the head was rather large and square, and the tissues soft. The ribs were

slightly beaded and the costal borders somewhat flared; the abdomen was soft and moderately distended.

This child lived under very favorable hygienic conditions, was out of doors nearly all of the time, was only moderately, but persistently, overfed, and yet developed mild rickets and gained only 24 ounces from the eighth to the eleventh month, or 2 pounds 10 ounces from the eighth to the sixteenth month.

TOO LARGE AMOUNTS VERSUS TOO LARGE PERCENTAGE.

So far cases have been cited in all of which high percentages of fat have been used—only once a little above 4 per cent., in the rest 4 per cent. or under. In a paper read before the American Pediatric Society in May, 1904,[2] Holt cites five cases resulting from too high percentages of fat (5 to 7+ per cent.). These he details under the following headings:

HOLT'S SERIES.—CASE 1.—Overfeeding with high fat, rapid increase in weight and progress in development till 8 months old; then general convulsions followed later by tetany, laryngismus, fatty liver (?). Recovery after three months' illness.

CASE 2.—Prolonged feeding with high fat, notwithstanding which constipation and the development of moderate rickets followed by acute disturbances of digestion with repeated convulsions.

CASE 3.—Overfeeding with high fat; convulsions.

CASE 4.—Habitual vomiting aggravated by high fat; serious gastric catarrh produced; finally cured by stomach washing.

CASE 5.—Feeding with high fat; eczema, habitual constipation and finally habitual vomiting.

So striking is the similarity of this symptomatology to that of the cases I have just cited that there can be no reasonable doubt as to an identical cause, i. e., too much fat. This excess Holt repeatedly states in terms of percentages as if the essential point were too high a percentage of fat—not too great an amount. It may seem a trivial matter to point out this difference of viewpoint—and yet right here is the very kernel of the matter—the essential difference between feeding by a percentage method and a method that determines the amount of food that should be given. That these digestive disturbances are not due to too high percentages of fat *per se*, can be demonstrated with the ease and certainty of a laboratory experiment by any one who will feed a number of babies on low milk dilutions in excessive amounts; they will get the identical symptoms that Holt has described and that are undoubtedly due to too much fat.

A year ago I started about a dozen babies on simple milk and water, or milk and cereal water dilutions (1 to 3, to 1 to 0), with about 5 to 7 per cent. sugar. Most of these babies were sick and required a preliminary one or two days' hunger diet. Such immediate results in the form of smooth, rich yellow, well-digested bowel movements I had never seen before. Gradually all those assisters in proteid digestion from alkalies to peptonization were dropped without any appreciable difference, except, in some cases, a beneficial one. These babies were not constipated, they gained rapidly in weight from the start—there was not that long anxious wait in the sicker cases that we were accustomed to in those we fed on whey and cream and cereal water mixtures. One after the other, however, these babies did become constipated, often very much so, with pale, hard, dry bowel movements. Some failed to gain after the first rapid gain. They became restless and did not sleep well at night. Many had eczema and some would not take all of their food. Some of them gained steadily and well and seemed in good condition. Practically, all were ultimately constipated except those in whom sudden severe attacks of diarrhea broke out, often without any apparent reason. We had been taught, and had ourselves taught, that simple milk dilutions would "invariably cause constipation," so this result was not unexpected, and the other symptoms were considered secondary to it. In certain cases I added cream and found, to my astonishment, that the condition was not only not relieved, but often made much worse.

I then began to estimate energy quotients in all cases, and found that all of these cases had been overfed, being given usually energy quotients from 120 to 170 during the period of eczema and maximum constipation, or just before the catastrophe. Since we have calculated energy quotients in every case constipation has given us comparatively little trouble and the other symptoms of overfeeding no longer occur. We have heard much of "fat diarrhea" in the last few years. Fat constipation deserves at least an equal place in our nomenclature. We have come to look on fat as the constipator—and the one condition in which we have never seen constipation is the use of straight, skimmed milk, the maximum proteid and minimum fat food. A single case from this series will illustrate what has been said:

CASE 4.—Baby E., born March 14. Weight 10 pounds (?) and was wet nursed one month, but lost in weight; so was then fed on modified milk. Was first seen May 12, when it weighed 8 pounds 12 ounces. Had had a good deal of colic, with three to four bowel movements daily, but was now constipated. Started the child on barley water for twenty-four hours, then 5 ounces of milk was added daily until it received the following: Milk, 15 ounces; barley water, 25 ounces; sugar, 2 ounces. The energy quotient was 154. The composition of the food was: Fat, 1.5; proteid, 1.5; and sugar 6.0. Eight 5-ounce feedings were given daily at three-hour intervals.

May 5: Weighed 9 pounds 12 ounces, a gain of 1 pound in one week! The baby was well in every way, so the food was continued. *This enormous gain in weight is characteristic of early rapid overfeeding, and we now consider such a gain an imperative indication for reduction in the amount of milk unless the energy quotient is very low.*

May 30: Weighed 10 pounds 3 ounces; had two or three bowel movements a day; yellow, not offensive, but a little too hard and pale, so that baby grunts a great deal in passing them. Slight eczema. The same food was continued.

June 9: Weighed 10 pounds 13 ounces. Food the same; energy quotient, 123. Two bowel movements daily, which were whitish, dry, formed and offensive. Eczema increased, spreading to chest and back as well as face. On account of the small gain of 2 ounces in one week, 2 ounces of milk was added, and three days later 2 ounces more. The food mixture was: Milk, 19 ounces; barley water, 21 ounces; milk sugar, 1½ ounces, giving an energy quotient of 126. The food strength was: Fat, 1.9; proteid, 1.9, and sugar, 6.0. The number of feedings, quantity and intervals remained as before.

June 30: Weighed 11 pounds 11 ounces, a gain of 14 ounces in fourteen days.

The increase in food, as often happens, even when there was no previous gain, increased the weight, but brought on the catastrophe: a diarrhea for ten days. For a time there were bowel movements every ten to fifteen minutes of a pale, yellow, curdled, cheesy, sour and offensive character. Child was restless, slept little and cried much.

July 3: Baby was put on barley water for two days and the crying stopped, and it slept well. Five ounces of milk were added, with six to eight bowel movements daily resulting, so child was put on barley water for four days longer.

July 7: Weighed 11 pounds 6 ounces. The addition of milk produced the same bowel condition as before. After several attempts to relieve conditions, including trying buttermilk (?) (not fat free), the mother decided to take the baby to the

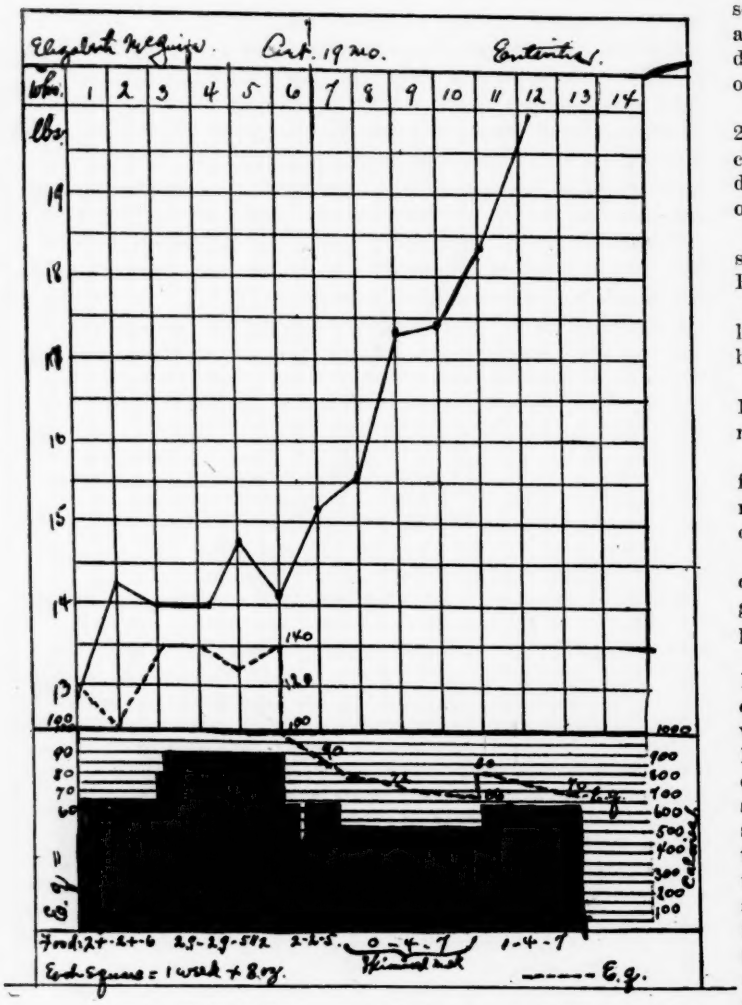
2. Disturbances of Digestion in Infants Resulting from the Use of Too High Fat Percentages.

country and the further history is unknown. The child never had 2 per cent. of fat, although 3½ months old when the food disagreed, and was typically overfed on 1½ per cent. of fat.

The following case had less than 3 per cent. of fat at 19 months, but had severe symptoms of overfeeding on an energy quotient of 140 from which she recovered at an incredible rate on less milk—later skimmed milk with very low energy quotient; gaining 5 pounds 14 ounces in 51 days, nearly 13 ounces a week for over seven weeks.

CASE 5.—Baby McGuire (see chart).

August 20: Entered Wesley Hospital, 18 months old; had an enteritis of three weeks' standing; was thin, pale, haggard and



Case 5.—Baby McGuire. Rapid gain on e. q. of 120 followed by loss. No gain for 3 weeks on e. q. of 140. Enormous gain on e. q. of 66 to 80. In general as e. q. is lowered gain is increased, and vice versa. Maximum gain of 1 lb. 11 oz. in one week on e. q. of about 70. Food at this time: Skimmed milk 40 oz., cane sugar 1 oz.

listless, with eyes sunken and a temperature of 101 F. Frequent green, curdy, slimy bowel movements. She was given stimulation and placed on cereal water for four days, then milk was added, three ounces a day.

August 29: Weighed 12 pounds 13 ounces; bowel movements had been normal for several days, but had been losing to this time. Energy quotient was slowly raised to about 120. Food mixture consisted of: Milk, 25 ounces; cereal flour, malt, water, 23 ounces; cane sugar, 1½ ounces. Six 8-ounce feedings were given daily at three-hour intervals.

September 5: Weighed 14 pounds 4 ounces, a gain of 23 ounces in seven days. Food was the same, with an energy quotient of about 100.

September 14: Weighed 14 pounds, with food as before; bowel movements were normal. On account of loss, the food was increased to milk, 35 ounces, barley water, 13 ounces, cane sugar, 1 ounce, fed as before, with the energy quotient 140.

September 21: Weighed 14 pounds on same food. One bowel movement daily; several days none; dry, pale, gray and hard. Child had not slept as well as before and showed eczema about the chest.

September 26: Weighed 14 pounds 12 ounces. Had gone home. The bowel movements were hard and dry, so that the child played with one, as with blocks; the eczema was worse. The same food mixture was given in five 10-ounce feedings at four-hour intervals.

October 3: Weighed 14 pounds 1 ounce. Child had not taken food well since she went home and will only take a few ounces at a time. Had five or six bowel movements daily, always gray or whitish; these were at times hard and formed, again soft and cheesy. Never green. Child was cross and peevish and restless at night, but had no fever. The milk was cut down to 20 ounces; barley water, 20 ounces; cane sugar, 1¼ ounces, giving an energy quotient of 98.

October 10: Weighed 15 pounds 3 ounces, a gain of 1 pound 2 ounces in eight days. Had not been cross since the food was changed and took it well almost at once. Slept well and the diarrhea had stopped, but bowel movements are still a mass of whitish curds; the rest pale and yellow.

October 13: On account of the curds was put on straight skimmed (centrifuged) milk, 40 ounces; sugar, 1 ounce. Energy quotient of 75.

October 24: Weighed 15 pounds 10 ounces. Two good, yellow, normal bowel movements daily; no curds two days after being put on skimmed milk; the same food continued.

October 31: Weighed 17 pounds 5 ounces, a gain of 1 pound 11 ounces in one week. Energy quotient 66. Bowel movements normal.

November 7: Weighed 17 pounds 7 ounces. Still on the same food. On account of the small gain child was put on whole milk, 10 ounces; skimmed milk, 30 ounces; cane sugar, 1 ounce. Energy quotient, 80.

November 14: Weighed 18 pounds 5 ounces, a gain of 14 ounces in one week. Child had perfect digestion, good color, good disposition and slept well. Is getting solid; laughs and plays.

November 23: Weighed 19 pounds 15 ounces, a gain of 1 pound 10 ounces in nine days, on the same food. Energy quotient, 70. General condition excellent. Since this child went home it has received a small amount of additional food. I asked the mother many times as to just what this consisted of. She always stated positively that the child had one thin slice of bread about 2 inches square and a half cup of beef soup daily,, and, every other day, she chewed a piece of meat the size of one-half a finger. This child had been so sick that the mother had given her up; the latter had been cautioned so often and so hard against giving too much food, and her faith in the last milk was so implicit that I believe her statement is accurate. To make doubly sure I asked the nurse in charge of the diet kitchen to go to the home and investigate the matter. She was equally convinced that the child was getting no more than the mother stated. For a study in actual, rather than relative energy quotients, the caloric value of these could be added to the milk.

Such enormous gains are not so alarming nor do they carry the same therapeutic indication, as when whole milk is given, especially in excessive amounts. The offending fat is not present in sufficient amount to cause trouble.

From all that has been said I believe the inference is justifiable that overfeeding to the point of producing well-marked symptoms is not only widely prevalent in this country, but the rule. Our present methods, especially the percentage method, must then be inadequate to prevent this. If by one method—that of using simple milk dilutions with the addition of carbohydrates, and with no definite check on the total amount to be given, a 7 months' old child among our cases, whose food is in-

creased from 10 to 15 ounces of milk can develop extensive eczema, restlessness, typical constipation, later diarrhea, fever and loss in weight, then this method alone is not so accurate as it would be if combined with a procedure that would tell us in advance that that child's energy quotient was being sent up from a dangerous height of 130 to a disastrous one of 152. And if a "schedule for an average healthy infant (Holt) of 6 months calls for a fat 4, proteid 2, sugar 7 mixture of 30 to 48 oz. then that schedule is not even approximately safe in itself when it permits us to go from a proper energy quotient of 90 to a decidedly dangerous one of 145 if our healthy child weighs 16 pounds, as it ought to. These tables uniformly recommend excessive amounts and too short intervals that must lead to overfeeding unless we are familiar with the above picture of overfeeding and have had an unusual experience. The percentage alone is an unreliable and irrational check even in the healthy child. If we could have our cases under ideal control at all times we might be satisfied with recognizing symptoms of overfeeding as they arise. But with our conditions, especially in those of limited experience, something safer and more tangible is necessary—something that will forestall symptoms rather than permit us to recognize them. We have become convinced that in our feeding cases determination of energy quotient is simply indispensable. Those of us who have adopted it have become enthusiastic over it as we have over no other procedure in infant feeding. It is this point that I wish to emphasize especially, that this determination of energy quotient is not merely an interesting study in physiology, but an intensely practical procedure of the greatest value not alone to the scientific pediatrician, but to any man who feeds babies and wants to be sure of results. It alone enables him to tell approximately how much food his baby really needs, and by keeping this in mind, and departing from it only when clearly indicated, he will avoid on the one hand a prolonged underfeeding that is by no means uncommon and, on the other hand, a still more disastrous overfeeding.

It is true that caloric value represents only one function of food, that of heat production. It is equally true that in our overfeeding we have to do with a real milk overfeeding and that the amount of milk, and not the caloric value, would perhaps be the surest guide to the prevention of this symptom-complex. In a child at Wesley of 17 months and weighing 16 pounds that has been mentioned before, a change of milk from 26 oz. to 30 oz., but with an actual lowering of energy quotient from 96 to 90, due to lessening of sugar and barley water, produced nearly all of the symptoms of overfeeding within a few days. And yet these symptoms would doubtless have arisen with less increase of milk if the higher energy quotient had been maintained. These are theoretical considerations. For practical purposes the method advocated is amply sufficient, and the most desirable one so long as we are all using well balanced but widely different food mixtures and need a common measure.

It need hardly be mentioned that this method is not to be used to the exclusion of other things. To feed a baby one needs all the help obtainable from every source. The baby itself must be seen, it must be weighed regularly and accurately, its disposition must be inquired into, its bowel movements must be seen, not alone described by the mother, the actual preparation of the food must be supervised. Nor is this method applicable only to the simpler milk dilutions, plus carbohydrates, that we use. Its use is indicated nowhere so much as in the use of high fats in the conventional percentage method, for obvious reasons. Such indications for increase of food as apparent hunger, restlessness, failure to gain or loss in weight, or mere lapse of time, need hardly be discussed after what has been said.

The treatment of this condition, after it is present, is more or less evident from its pathogenesis. In general the fat must be reduced and the carbohydrates increased to take its place. In milder cases it is enough to do only the former, together with lengthening the interval to at least four hours. In severer cases the milk must be greatly reduced and a gruel or flour water added. If this is not sufficient to produce normal bowel movements and gain in weight, more sugar must be added, either as cane sugar, or preferably, according to Czerny and Keller, as maltose. Milk sugar has not shown itself serviceable clinically. To meet this one indication of overfeeding with milk Keller's *Malzsuppe*[3] is intended. This or another combination of milk, flour and cane sugar or maltose, modified to meet the individual conditions, is best kept up for a number of weeks because these children are not readily lead back again to normal amounts of milk. The milk is then gradually increased and the carbohydrate diminished until the usual milk modification is again reached. Rapid improvement and ultimate cure are the rule.

We are handicapped in not having a desirable maltose, or a serviceable malt preparation, in this country. The ordinary malt extracts can not be used in large amounts on account of their laxative action, and the use of maltose itself is not feasible. In some cases we have used for this purpose a well-known "baby food" that is composed largely of maltose, with excellent results.

In all of these cases, but especially in the severer ones, the most rapid and certain *immediate* improvement is produced by the use of a fat-free milk as we would expect. I believe it is a matter of indifference whether this fat-free milk is sweet, i. e., skimmed milk, or whether it is buttermilk. So uniformly certain is the action of buttermilk in these cases, as in nearly all other digestive disturbances of infancy, that its well-deserved popularity is easily understood, and we can see why Baginski considers its use in dyspepsia, for example, as "almost a specific, like antitoxin in diphtheria." After a considerable experience in the use of skimmed milk I am convinced that its action is the same as that of buttermilk, and that in both cases the striking results are due to the fact that we have a nearly fat-free food. If this is true then the use of skimmed milk has obvious advantages over that of buttermilk. It can be used in practically any strength, and is, of course, best prepared with the addition of sugar, and often also of flour, or a gruel, so that the absence of fat is compensated by the greater amount of carbohydrate in its place. The only objections to the use of skimmed milk in these cases of overfeeding are that it is rarely necessary to eliminate the fat so completely, and, secondly, it is often difficult to return from a fat-free to a fat-rich food in a reasonable length of time. Constipation and curds in the bowel movements quite regularly follow the addition of even a small amount of whole milk, i. e., of fat, and the change must usually be made very gradually.

3. Wheat flour, 50 g., are stirred up in .33 l. of cow's milk and run through a sieve. In a separate vessel 100 g. of Loeflund's Malzsuppen extract is dissolved in .66 l. of lukewarm water. The two mixtures are then poured together and under constant stirring are brought to a boil.

Just what part food intervals play in the production of overfeeding is difficult to estimate. Of the therapeutic value of longer intervals than the customary two or three hours there can be doubt only in the minds of those who have not tried it. If cow's milk does not leave the healthy baby's stomach before the end of 2½ to 3 hours, and much later in the case of the sick one, then it would certainly seem indicated theoretically that the minimum interval should be 3 hours in health and 4 hours in pathologic conditions. A considerable and remarkably uniform experience has convinced us that the 4-hour interval is indicated in all pathologic cases and is preferable in all normal cases. Besides giving the stomach more rest and making the baby more comfortable, this long interval is a potent factor in preventing overfeeding, for it is manifestly more difficult to put enough food into a baby's stomach to overfeed it if that organ is filled only five or six times a day than if that process is repeated eight or ten times a day.

A word as to the ultimate results from feeding less fat. This consideration naturally limits itself to rickets and to the prevalent teaching as to its etiology, i. e., that these children get too little fat. There certainly is at the present time no real evidence that too small an amount of fat is an important factor in the causation of rickets, and there is an ever-increasing conviction that rickets can, and does, develop under our very eyes in spite of the fact that our cases are fed much fat—yes, often because of that fact (Holt and see babies O and F). Moreover, it is far from any one to recommend a small amount of fat. The child needs proportionately more of it early in the first year than at any other time in life, but that amount need never exceed an equal amount of proteid that the child can take with ease.

CONCLUSIONS.

1. Overfeeding is so prevalent in this country that it is the rule.
2. Overfeeding is second to no other factor in the pathogenesis of infant feeding.
3. Overfeeding presents an easily recognizable, definite symptom-complex.
4. The percentage method is inadequate to prevent overfeeding, the well-known feeding "schedules for an average healthy infant" of a given age fostering it by recommending excessive amounts; and, moreover, mere percentage leaves undetermined the amount of food the baby gets.
5. To feed rationally and especially to prevent overfeeding it is necessary to know how much food the baby is getting in proportion to its body weight, best expressed in terms of energy quotient.
6. The disturbing element in overfeeding with cow's milk is the fat.
7. Fat in excessive amounts regularly produces constipation—proteids never do so.
8. It is never necessary to give more fat than proteids of cow's milk.
9. The interval between feedings should be 4 hours.

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Rising by Another's Downfall.—A man may become grasping and avaricious, remarks the *Chicago Clinic*, even in the pursuit of knowledge, but when that avarice begins to work destruction to others, he becomes a menace to the general weal, however virtuous his quest. No individual in the medical profession has the right to pursue any course for his own benefit which is carried on at the expense of others and without their consent.

CHOICE OF METHODS FOR DILATING THE GRAVID UTERUS.

EDWARD P. DAVIS, M.D.
PHILADELPHIA.

During the early months of gestation the induction of labor by gradual dilatation is not indicated. Circumstances arising which make the emptying of the uterus necessary, demand that this should be done as a surgical operation under anesthesia. Dilatation by graduated metal bougies, aided by bladed dilators and followed by curetting and gauze packing form the procedure most available in these cases. The indications for this procedure are pernicious nausea with fulminant toxemia, incomplete abortion, and hemorrhage from the uterus caused by or accompanying disease of the ovum. Gradual dilatation should be declined in these cases, because of the inefficiency of the gradual method and its danger of septic infection.

After the early months of gestation it may be necessary to dilate the uterus artificially for acute and threatened toxemia, placenta prævia and for the premature separation of the normally situated placenta.

IN TOXEMIA.

In selecting indications for this procedure we must distinguish between the nephritis of pregnancy and acute toxemia of hepatic origin. The nephritis of pregnancy is not an indication for the rapid emptying of the uterus. These cases can be safely managed by other means. Should treatment not prove successful, placental changes will occur which will ultimately bring about the death of the fetus and be followed by its expulsion. Should treatment be successful, the mother may proceed to full term, while in some cases the treatment addressed to the condition results in exciting labor. The presence, then, of albumin in considerable quantity and of casts in the urine with symptoms of nephritis does not indicate a rapid emptying of the uterus.

When the patient has altered pulse tension, however, the nervous disturbances of toxemia, obstinate constipation and evidences of disintegration of the blood which accompany this condition, the uterus should be emptied as soon as is consistent with the patient's safety. Remembering the tendency to thrombosis and embolism and the hepatic congestion in these cases, that method must be selected which will do the least violence to the patient's tissues, thus avoiding the products of such violence, which received into the circulation increase the danger of thrombosis and embolism in the viscera. For rapid dilatation of the uterus, in these cases, whenever possible, the hand should be the instrument of choice. If one finger can not be introduced, metal bougies or bladed dilators may be employed until one or two fingers can be inserted. Bimanual dilatation with one or more fingers of each hand working synchronously in opposite directions is, in my experience, the most efficient method. This may be carried to the point where the membranes may be ruptured and version performed, or the membranes ruptured and the forceps used for delivery. Should the cervix prove unmanageable by the fingers, in my experience, Bossi's dilator employed to one-half or two-thirds its full capacity during thirty to forty-five minutes with anesthesia has proven harmless and efficient. Except in rare cases, full dilatation with Bossi's dilator should be avoided, because of the danger of serious laceration. Should these methods not prove sufficient, incisions of the cervix have given good results.

Vaginal Cesarean section for acute toxemia or threat-

ened eclampsia is at present under wide discussion. I have not yet seen a case in which it was clearly indicated. In the hands of those accustomed to perform vaginal and abdominal section, this method may be available. It requires, however, assistants and technic which can not always be commanded. It is best available in well-equipped maternities. It is questionable whether the extensive dissection required in some of these cases would not add to the patient's danger.

In acute toxemia with threatened eclampsia, I have found elastic bags too slow in their action to be satisfactory. The continued pressure of these bags without anesthesia tends to excite eclamptic convulsions. Bags and bougies, in my experience, are contraindicated in this condition.

I desire to call attention to the fact that in a considerable number of cases of virulent toxemia with eclampsia, the patient is hopelessly ill when the physician is summoned. Beginning changes in the lungs, whether edematous or necrotic, forbid the use of anesthetics, and in these cases recovery under any form of treatment is exceedingly rare. The analogy between these cases and patients with extensive pneumococcus infection of the lung is close; and as the surgeon would hesitate to anesthetize a patient seriously ill with pneumonia, so he should avoid anesthesia and direct interference with a pregnant patient suffering from acute toxemia and eclampsia in whom pulmonary lesions are either beginning or well pronounced. Bleeding followed by saline transfusion, inhalation of oxygen and the very cautious use of veratrum, with rectal stimulation, give more hope of success.

Abdominal Cesarean section in acute toxemia with eclampsia is no more indicated than are other operations requiring anesthesia and incision and suture of the tissues.

IN PLACENTA PRÆVIA.

In placenta prævia experience shows that the hand is far superior to any other instrument for dilatation. Until the operator is ready to proceed the use of the gauze tampon is indicated to lessen hemorrhage and prepare the way for dilatation. When, however, the necessary assistants and appliances for asepsis are at hand, dilatation should be performed. In these cases the operator must use the hand in accordance with the conditions found on examination. When the placenta completely covers the os it must be perforated by the fingers, and if possible, a foot seized and brought down. Using the fetus as a plug, the operator should not proceed to immediate delivery, but promote gradual dilatation with the body of the child, utilizing the opportunity to stimulate the mother. In cases in which the placenta does not completely cover the os, the membranes may be ruptured, cervix dilated, and if the head be low down forceps may be applied and the child delivered. If the head is not engaged version may be selected. While the bimanual method of dilatation may be employed in placenta prævia in some cases, it will be attended with more hemorrhage than dilatation by the one hand only.

While in some cases of placenta prævia the elastic bag may be useful, its action as a rule is too slow, and its liability to promote hemorrhage too great to bring it into direct comparison with the hand.

In my experience Bossi's dilator is an exceedingly dangerous instrument in placenta prævia. The cervix and lower uterine segment are so softened by the increased vascularity accompanying the condition that the tissues tear readily and often fatally. In a successful effort to secure a living child in central placenta prævia I have seen the anterior portion of the lower uterine segment torn and the urethra ruptured.

Multiple incision of the cervix, vaginal Cesarean section or abdominal Cesarean section must be very rarely indicated in placenta prævia. Only in the well-equipped maternity and under exceptional circumstances, should these operations be chosen. While we must believe that cases of placenta prævia are sometimes seen in which the cervix is so hard as to be dilated with great difficulty, these cases must be exceedingly rare and should be exceptions to our rules of practice.

IN PREMATURE SEPARATION OF NORMALLY SITUATED PLACENTA.

In premature separation of the normally implanted placenta immediate delivery is demanded. Here the thirty to forty-five minutes necessary for dilatation by Bossi's dilator or by the fingers is too long if a reasonably safe and quicker method is available. It is here that Cesarean section, vaginal or abdominal, under appropriate surroundings should be selected. In many cases the advantages would lie with vaginal Cesarean section, and consent may oftener be obtained for this operation than for the apparently more formidable one of abdominal Cesarean section. I believe, however, that in many cases the abdominal method will prove the safer.

In the hands of the physician not competent to perform Cesarean section, multiple incision of the cervix followed by introduction of the hand, rupture of the membranes and dilatation as rapidly as is consistent with the integrity of the mother's tissues should be chosen. With the patient in good condition, without excessive hemorrhage, the use of Bossi's dilator and the hand may prove sufficient.

The indications given for rapid dilatation of the uterus after viability comprise those most commonly seen. Occasionally, however, cases are observed in which threatened exhaustion or some serious pathologic condition in the mother demands rapid delivery. A labor apparently normal may proceed through its first stage and a portion of the second and exhaustion supervene. In these cases dilatation with Bossi's dilator, followed by complete dilatation with the hand under anesthesia, will permit the operator to proceed to immediate delivery by forceps or version.

IN COMPLICATED CASES.

In patients whose pregnancy is complicated by cardiac lesion, impending death may demand immediate delivery. In these cases if the patient be in a hospital vaginal Cesarean section, incision of the cervix or dilatation by the fingers may be chosen. Occasionally, in phthisical patients, a similar choice must be made.

In the event of maternal death before delivery during labor, the fetus continuing to live and in fair condition, that method of delivery must be selected which is quickest. In my experience the advantages lie in abdominal Cesarean section in these cases.

In discussing so important a subject, I desire to make an earnest plea with the profession that complicated cases of labor be given their due importance. Medical science has now reached that stage of development when the general practitioner does not conduct a serious case of appendicitis or strangulated hernia without the aid of the surgeon. Complicated cases of labor are more difficult and more responsible than those just cited. We should no longer advise methods of treatment for these

cases because they can be carried out by the general practitioner any more than one would advise that a patient with appendicitis or strangulated hernia be deprived of operation and be given other treatment instead. It must be rare indeed for the general practitioner to be so situated that he can not obtain for a complicated case of labor the services of an obstetrician. Throughout the country there are so many well-equipped hospitals and facilities for transportation are so abundant that such cases, whenever possible, should be taken to hospitals and there receive adequate attention. If this is impossible, obstetricians have means at their disposal for establishing in private houses the aseptic technic which makes all surgical operations comparatively safe.

CONSIDERATION OF FETAL LIFE.

I have said nothing concerning the consideration of fetal life. For example, in placenta prævia, often times the best results are obtained by sacrificing the child in the interests of the mother. When, however, the operator is so situated that he can perform any operation desired, and the parents express a strong wish that consideration be given the life of the fetus, this should not be neglected. Abdominal Cesarean section may sometimes be elected in deference to this consideration.

Clinical Notes

MULTIPLE ANEURISM OF THE AORTA, WITH RUPTURE INTO THE TRACHEA.

PULMONARY TUBERCULOSIS: SYMPTOMS SIMULATING PERICARDITIS.*

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PHILADELPHIA.

History.—An unmarried colored man, 32 years old, employed as a waiter, was admitted to the Polyclinic Hospital on account of severe cough, which had been present for four or five months, together with frequent expectoration of viscid mucoid material and pain in the side of the chest on coughing and on deep inspiration. His condition grew gradually worse, and five weeks before coming under observation he was compelled to give up work on account of persistent cough, weakness and loss of flesh. Four days before admission to the hospital he suddenly became much worse, with the development of pain in the back and the side and a feeling of compression in the precordium and shortness of breath, while the previous symptoms continued with increasing severity.

Examination.—On admission the temperature was 98°, the pulse 112, the respirations 48. Respiration was labored and the expansion of the left side of the chest was obviously diminished, the portion below the clavicle moving scarcely at all. The percussion note was dull over the entire left chest anteriorly and posteriorly, with the exception of the lowermost portion anteriorly, and the breath-sounds were greatly enfeebled throughout the entire area of dulness. The percussion note on the right side was clear, while the breath sounds were intensified. Marked and forcible pulsation was visible in the fifth and sixth interspaces an inch or more outside the left nipple-line, giving rise to bulging to an extraordinary degree. The area of cardiac percussion dulness was increased and the action of the heart was labored and the pulse weak. A systolic murmur was audible over the body of the heart near the pulmonic area, but no friction sound could be detected.

Shortly after admission an aspirating needle was introduced into the left eighth interspace in the midscapular line and four ounces of amber-colored fluid were withdrawn. The apparatus working badly at this time, the needle was again introduced several hours later and four ounces of blood-stained fluid were obtained. The fluid was straw colored and had a neutral reaction and a specific gravity of 1018. It contained a large amount of albumin and chlorids, and a slight coagulum formed at the bottom of the containing vessel. In the sediment obtained by centrifugation and treated with Wright's stain only granular débris was found. The hemoglobin percentage was 80, and the number of red blood corpuscles 4,100.000, the number of colorless corpuscles 13,200 in the cubic millimeter. The patient gained no immediate relief from these procedures, although in the sitting posture the percussion note over the upper portion of the left chest just below the clavicle appeared clearer and the breath sounds more distinct.

Diagnosis and Treatment.—The presence of acute dilatation of the left side of the heart was suspected, while Dr. Riesman, who was good enough to see the patient with me, suggested that the overaction of the heart, with the bulging apex-beat and the disproportionately weak pulse, might represent untoward effects of the action of digitalis, which at this time we did not know had actually been administered. Spirit of glonoin, 1 minim, and spirit of nitrous ether, 1 fluidram, were given every hour and tincture of aconite, 1 minim, every two hours for six doses, with the result that the heart grew quieter and the apex-beat receded and became less marked. The patient passed a fairly comfortable night, although he slept but little and complained of pain radiating from the left shoulder to the precordium. The urine had a specific gravity of 1032 and contained a trace of albumin, with urates, but no sugar or tube-casts.

Further History.—There was little change in the physical signs on the succeeding days, but the temperature began to rise on the second day, gradually reaching 103.2 on the third day. The pulse ranged between 96 and 128 and the respirations between 28 and 48. At this time it was noticed that eating appeared to induce coughing and this, in turn, vomiting. Previously, coughing had been quite unobserved, but now it became marked and the expectorated matter contained a slight admixture of blood. The percussion note became clearer over the upper half of the left chest, with roughened breathing and mucous râles, while dulness persisted over the lower half, with enfeebled breath sounds. Vocal resonance and fremitus were diminished in lesser degree above than below. The hemoglobin percentage was found to be 96 per cent., the number of red blood corpuscles 5,050,000, the number of colorless corpuscles 11,800 in the cubic millimeter.

On the fourth day it was noted that the patient complained of severe precordial pain occurring in paroxysms. He exhibited a preference to lie on the left side. Morphin was administered hypodermically to secure sleep at night, but it produced only quiet. On the fifth day an aspirating needle was introduced into the pericardial sac, but only a small amount of blood was withdrawn. The impulse of the heart was less pronounced and a to-and-fro murmur could be heard over the body of the organ. The hemoglobin percentage at this time was 80 and the number of red corpuscles 4,100.000 and the number of colorless corpuscles 13,200 in the cubic millimeter.

On the sixth day coarse crackling was noted at the end of inspiration. The apex of the heart was now in the fourth interspace. The patient was readily exhausted by any exertion, active or passive. The sputum was greenish-yellow in color and thick and tenacious in consistency. It contained no lumpy or cheesy particles and no fibrinous casts. Microscopically pus corpuscles, diplococci and staphylococci were found, together with a few rhomboidal crystals, but no tubercle bacilli. On the seventh day the urine had a specific gravity of 1024, and was free from albumin, sugar and bile. It contained a trace of indican, an occasional hyaline tube-cast, cylindroids, mucus, urates, leucocytes and epithelial cells. It failed to yield the diazo reaction.

On the ninth day it is recorded that the percussion note on the left side of the chest was hyperresonant from the clavicle down to the third interspace. From here to the fourth interspace the note was mixed and below this it was dull. The apex

* Read before the Section on General Medicine of the College of Physicians of Philadelphia, Feb. 11, 1907.

beat of the heart was visible in the fourth interspace in the parasternal line and here a to-and-fro rub was palpable and a marked to-and-fro friction murmur was audible. There was considerable cough, with blood-tinged sputum. Bronchial breathing could be heard over the base of the left lung from the angle of the scapula downward, together with small moist râles. On the eleventh day the patient was comfortable and free from pain. Respiration was easier and the man slept well at night without anodyne or hypnotic, although he continued weak.

On the twelfth day the apex beat was most distinct in the fourth interspace one-half inch within the nipple line and in the fifth interspace 1 inch within the nipple line. On the thirteenth day the friction sound was much less audible over the heart and an occasional click was audible at the end of the systole. On the fifteenth day the urine exhibited no abnormality. On the following day the friction sound was no longer audible with the action of the heart, although appreciable with inspiration at and beyond the apex, Sonorous and sibilant râles with roughened breathing could be heard over the right chest anteriorly, with crackling râles posteriorly. On the left the breath sounds were clear above, while below the angle of the scapula fine crepitation was audible and below this blowing breathing, with crepitation. On the eighteenth day the first sound of the heart was dull at the apex and attended with a rough murmur in the second and third interspaces slightly to the left of the sternum, where also occasional crackling was audible. On the next day the patient was comfortable, taking food well, sleeping soundly at night, breathing with difficulty and coughing less.

Death.—The conditions described continued for three days, when without premonition the patient was seized with dyspnea and an attack of cough, resulting in the expectoration of about 1½ pints of blood, and within two minutes the man was dead. The urine had, on the day previously, again been found normal. The temperature had pursued an irregular course, with a somewhat declining tendency, in the afternoon ranging between 103.2° on the third day and 100° on the twenty-first day and in the morning between 101.8° on the fourth day and 98.4° on the day of death. In the last six days of life it had fluctuated between 98.6° and 101.6°. The pulse had fallen from 136 on the third day to 88 on the day preceding death, and the respirations from 52 to 24.

Previous History.—The patient had had measles, whooping-cough, chicken-pox and diphtheria in childhood and an attack of left-sided pneumonia at the age of 16. At 27 or 28 he suffered for eight months with an infected wound of the leg following a punctured wound of the foot inflicted by a nail. Two operations were required, an anesthetic not being given in the second on account of the presence of a cardiac lesion. At the age of 29 the man had been treated for an affection of the mitral valve. He drank whisky rather freely and smoked little. He had had three or four attacks of gonorrhea, the last one year before coming under observation. He had a chancre at the age of 27, followed by a general cutaneous rash.

Postmortem Examination.—The left pleural cavity was found to contain 350 c.c. of straw-colored fluid. The left lung was bound to the chest wall from the anterior axillary line backward to the vertebral column by recent fibrinous adhesions that were readily broken up; the apex was bound by dense, resistant adhesions. The right pleural cavity was free from both fluid and adhesions.

The pericardium was not adherent to the pleura. The pericardial sac contained about 6 c.c. of straw-colored fluid. Its parietal surface was smooth, grayish-white and glistening. The visceral layer also was smooth and glistening. On its anterior aspect it presented an area 4 cm. long and 1.5 cm. wide, deep purple in color, while directly opposite on the parietal layer was an area 1 cm. long and 1.5 cm. wide of deep red color. Both lungs were constituted of three lobes. The lower and median lobes of the left lung were solid, while the upper lobe, though somewhat collapsed and nodular at the apex, contained a certain amount of air. On section the lower lobe, especially at the center, was the seat of a large number of confluent tubercles, becoming progressively less dense toward the periphery. A similar condition was present in the middle lobe and, perhaps in less marked degree, at the apex and base of the upper lobe. Portions of the apex contained inspissated mucoid or cheesy masses. The lower lobe of the right lung on section appeared stained a deep blood red and gentle pressure caused the escape of frothy mucus. A similar condition was present in the middle and upper lobes. The apex was the seat of a small number of whitish-blue, apparently subpleural nodules. Both lungs exhibited marked pigmentation, somewhat irregularly distributed, and in places apparently following the boundaries of the lobules.

The spleen was flattened, apparently somewhat enlarged, dark-red in color, flabby in consistency and on section rather friable.

The liver was large and firm, presenting a somewhat mottled appearance on section. The gall bladder was normal.

The kidneys were large, pale and fatty, with lines of hyperemia. The capsules stripped readily, leaving behind a smooth surface.

The heart was comparatively small; its valves and cavities normal. The leaflets of the aortic valve were the seat of slightly opaque atheromatous change. The arch of the aorta below and toward the right exhibited an aneurismal dilatation, admitting the little finger for a distance of 2 cm. At a distance of 1 cm. to the left of this was a second dilatation of much the same size, which had eroded the trachea and ruptured into its lumen. Somewhat farther to the left was a third aneurismal dilatation large enough to admit the thumb for a distance of 1.5 cm. and partly filled with laminated clot. A fourth aneurism arose from the thoracic aorta, about 3.5 cm. below the arch. This was 7 cm. long, 5 cm. thick and 4 cm. wide. It was filled with friable clot. A fifth aneurismal sac, 14 cm. long, arose at a slightly lower level and extended down to the diaphragm. The esophagus passed beneath the arch of the aorta to the right of the first and the latter two aneurisms and obliquely forward and upward and to the left over the surface of the second.

Microscopic Examination.—Dr. Guthrie McConnell examined the lung tissues. Small scattered areas were found apparently quite devoid of alveolar structure, which was replaced by tissue composed of cells containing epithelioid nuclei, lymphocytes and connective tissue. Some portions of these areas were degenerated, as indicated by the granular appearance and the diffuse staining. The alveoli generally were filled with albuminoid exudation containing numerous erythrocytes. The liver exhibited little change other than slight hyperemia around the central vein of some of the lobules.

The spleen exhibited some increase in connective tissue of the trabeculæ and slight congestion. The lymph nodes were prominent.

In the kidneys the cortical tubules exhibited marked cloudy swelling of the epithelium, absence of nuclei and granular deposits within the tubules. The glomeruli in places were congested. In one area a glomerulus was replaced by connective tissue, which also involved adjacent structures. There was also round-cell infiltration in areas.

The case was at first looked on as one of pleural effusion, which it was thought might be due to the dilatation of the heart that appeared to be present. The extraordinary bulging of the apex, in conjunction with the labored action of the heart, and the disproportionately small and feeble pulse, was, as stated, thought possibly due to the excessive action of digitalis. With the development of systolic and diastolic friction sounds over the heart the existence of pericarditis could not be excluded, but puncture failed to disclose the presence of an effusion into the pericardial sac. Somewhat later still, as the temperature rose and the sputum became blood streaked and crepitant râles made their appearance, the possibility of pneumonia had to be taken into consideration, and the progressive improvement both objectively and subjectively aroused hope of a gradual resolution of the morbid process present. I am frank

to confess that aneurism was not even suspected. Perhaps an *x*-ray examination would have disclosed its presence, but in view of the situation with relation to the heart of the largest dilatation of the aorta and the inconsiderable dimensions of the others, reasonable doubt may exist as to this point. The fatal hemorrhage and the result of the postmortem examination were wholly unexpected. Tuberculosis of the lungs had been suspected, but tubercle bacilli could not be found in the sputum during life. We felt quite convinced that pericarditis was present, but of this there was no anatomic trace.

Although the diagnosis was thus entirely at fault, we may comfort ourselves with the thought that at least the treatment employed did no harm, but, on the contrary, so far as this was possible, the rest in the recumbent posture, together with the administration of drugs having the power of lowering arterial tension and of diminishing the work of the heart, seemed to do symptomatic good. It may, however, be admitted in view of the conditions found at autopsy that the puncture of the pericardium was not wholly free from danger.

GUNSHOT WOUNDS INFECTED WITH THE BACILLUS OF MALIGNANT EDEMA.

REPORT OF TWO CASES; OPERATION; RECOVERY OF ONE.

G. H. R. GOSMAN, M.D.
AND
A. W. WILLIAMS, M.D.
Captains and Assistant Surgeons, U. S. Army.
CAMP DOWNES, LEYTE, P. I.

CASE 1.—*Patient.*—Private Hilatio Sajes, Philippine constabulary, a native of the Island of Leyte.

History.—The patient was brought into Camp Downes to the Military Hospital on the night of Jan. 8, 1907, suffering from gunshot wounds caused by slugs projected from a native cannon (a lantaka[1]). The injuries had been sustained two days before admission to the hospital as the result of an encounter with pulajanes.

Examination.—Two wounds were found; the first, 4 by 2 cm. in size, had its entrance in the dorsum of the right hand, no exit; the second had its point of entrance, 3 by 2 cm. in size, on the anterior surface of the right wrist.

Treatment.—The wounds were thoroughly cleaned and wet dressings (1:2000 hot mercury bichlorid) applied. On the following day a bluish discoloration extended over the hand; the warmth of the member (circulation) was still maintained. On the second day multiple incisions were made with the object of evacuating pus. On introducing the hypodermic needle to inject cocain for local anesthesia the pressure within very promptly forced the piston of the syringe back, filling the barrel of the syringe with gas. On withdrawing the needle the gas sizzed out of the tissues. No pus escaped from the incisions made in the tissues, only blood, serum and gas. On the third day the thumb which was gangrenous was amputated and the muscles and subcutaneous tissues of the entire hand were found to be gangrenous. Microscopic examination of a smear of serum from the tissues, stained with methylene blue, showed numerous bacilli, many of which showed spores, the pointed rods appearing at either end of the spores. Several specimens emphasized the appearance of these spore-bearing bacilli.

Diagnosis.—The infection was diagnosed as one of malignant edema and was confirmed by a characteristic growth in stab cultures of nutrient agar. The infection could be traced by the dilated blue superficial veins and swollen arm (one-third larger than normal) to a point two-thirds the distance up the arm.

Operation.—A modified circular amputation was done, disarticulating at the shoulder joint. An examination of a smear made from the tissues at this point was negative for the bacillus of malignant edema. The patient's temperature, which had ranged from 103 to 104 F., promptly subsided to normal and an uneventful recovery ensued.

CASE 2.—*Patient.*—Delfaliar Marcelo, volunterio (volunteer against the pulajanes), also a native of the Island of Leyte.

History.—Similar in every respect to that of Case 1. The two men were brought in together.

Examination.—The patient had a gunshot wound of the left leg. The wound of entrance was 2 cm. in diameter and located on the outer side of the upper third of the leg; the wound of exit, 3 cm. in diameter, was on the inner aspect of the leg. A bluish discoloration of the leg extended to the knee-joint and a strong odor of decomposition was present. From the knee-joint down the leg was swollen and cold. There was a lacerated gunshot wound, 12 by 8 cm., on the inner surface of the right thigh.

Treatment.—Hot local applications and rectal injections of strong coffee were administered during the night. On the following morning the patient's general condition was bad, with no return of circulation in the leg.

Operation.—Amputation above the knee-joint was decided on. On incising the skin and subcutaneous tissues a crackling sound and a retraction of the skin were very marked. This crackling was likewise apparent as the muscles were divided showing that a gas bacillus was undoubtedly present. No microscopic examination or culture was made. The patient succumbed at the commencement of operation.

Just how these patients became infected with the bacillus of malignant edema is not known, but, as they were in the mountains in rain and dirt for several days, it is believed they must be cases of infection from dirt. The probability of the bullets having been infected must be considered.

1. A lantaka is a cannon made of gas pipe or iron piping of larger caliber, old Spanish cannon, etc., mounted on wheels or hard wood or lashed to a tree. For combustion match heads are usually used, numerous slugs, chains, nails, screws and rocks are the projectiles. A fuse ignites the match heads through a tube.

VERONAL DERMATITIS.

WILLIAM HOUSE, M.D.
PORTLAND, ORE.

In a search of the literature at my command I have been unable to find a record of any case of dermatitis due to veronal, although a number of deaths from large doses, two hundred and fifty grains or more, have been reported. I have observed a considerable number of cases of drug eruption from copaiba, quinin, iodoform, iodids, bromids, and one from chlorid of gold and soda, but in no instance have I seen any eruption as acute and extensive as in the case here described.

Veronal is being extensively used. It is said to be efficient in doses of seven to ten grains, but I have used it repeatedly in fifteen-grain doses for insomnia. In subacute mania I have given ten grains every three hours, and in acute alcoholism single doses of twenty grains. In these and other cases in institution work I have prescribed, or seen prescribed by my colleague, R. L. Gillespie, about sixty ounces of veronal. No unpleasant effects have been witnessed, except vertigo, until the following case occurred:

Patient.—D. P., retired merchant, aged 61; suffering from subacute melancholia.

History.—I first saw him at 1 a. m., February 10, on his arrival after an all-day car ride. He was tired and nervous and complained of inability to sleep. He was given 15 grains of veronal. He seemed to recognize it by the taste, and declared he had taken it before and it had poisoned him. Inasmuch as he had been taking for months all kinds of nerve sedatives, this suggests a peculiar sensitiveness of taste for the drug, perhaps

part of his idiosyncrasy. At the time the remark was construed as a delusion. After taking the medicine he passed a restless night. On visiting his room in the morning I found him sleeping soundly. When aroused he complained of stupor and vertigo. His body, which on retiring exhibited no dermal abnormality, was found to be covered with an extensive eruption symmetrically distributed. The face appeared red, swollen and congested. On the back of the thorax the skin was hyperemic and tense, as in severe scarlet fever, and appeared as angry as does erysipelas. The front of the body and the arms and legs presented an eruption of blotches ranging in size from a quarter to a half dollar, separated by spaces averaging an inch. The center of each was a dark red papule, surrounded by a less intense raised area shading rather sharply into normal skin. The whole appearance was that of a severe bee sting or spider bite. Most of the blotches were circular in outline on the body and oval on the limbs, the long axes corresponding to the long axes of the limbs. About the axillæ the eruption was absent, the skin, by contrast, appearing curiously white. The itching was intense. At 3 p. m. the temperature had risen to 103 F., the pulse to 112, and the general appearance of the patient suggested severe toxemia. The temperature subsided to 99 F. by the following morning, rising to 100 F. in the afternoon, and returning to normal the next day. Meanwhile, the rash and toxic symptoms gradually disappeared, so that all that remained were a number of small petechiæ marking the sites of the larger lesions.

The cause of the dermatitis is verified by the statement of his former physician, that he had witnessed a similar eruption and toxemia in this patient after giving him five grains of veronal and repeating it in three hours. The significance of the eruption was not grasped until it occurred for the second time under medical observation. The patient also assures us that he took the same drug at a still earlier period with identical results.

THE NEGLECT OF THE ANAMNESIS.

BAYARD HOLMES, B.S., M.D.

CHICAGO.

Fashion is inexorable. The movements of the human mind in the form of public opinion and public action are like the tides. At one time a whole nation seems to be moved by a propulsive insanity and they trek to a new country or a new shrine. Again the sea calls and in every gulf and along every coast creep the galleys and bilanders of the adventurers. In a century Europe was suddenly covered with useless and meaningless towers that later furnished an almost inexhaustible supply of building material for the masonry of another period. While Athens was a city of thatched hovels and skin-clad warriors, a race was born that produced an imperishable art and an almost indestructible architecture. A new world was discovered in one century and in another America was subdued and contracted by an interminable network of iron roads. In medicine the same phenomena are observed. Pathology grew out of empiric medicine in the Fifties and in the Eighties antiseptic surgery and bacteriologic pathology sweep the remnants of the old empiricism and the old pathology aside, and the literature of medicine was rewritten.

It is hopeless, indeed, to attempt to turn these ocean currents of the mind, these tides of human activity, to call a halt in the unreasonable flow of energy in the direction which it unthinkingly takes. The successful man and the time server go with the current, the philosopher looks on with regret, and the impetuous youth struggles against the invincible. The undue attention which the medical curriculum gives laboratory study and microscopic investigation impresses the student with an exaggerated sense of the importance of the evidence they afford. The result has been a dangerous neglect of the study of the clinical history by our younger men and a great losss in the wisdom as opposed to the knowledge of the resulting doctor. The patient is and always will be worthy of more study than the disease, and his recovery and not the diagnosis is his need and the duty of the doctor. Our medical ancestors knew this. A few of us, hiding behind some protecting buttress to escape the frenzied horde of diagnosticians with their armament of microscopes, ophthalmoscopes, laryngoscopes, cystoscopes, and proctoscopes, still believe it.

Thirty years ago the medical schools of the United States furnished but little laboratory teaching. The first meddlesome work which the author did in the curriculum of the college to which he was attached was to extend very greatly the laboratory method and to tax his faculty with fifty thousand dollars for buildings and equipment, to double the faculty with an army of laboratory teachers, and to add to the burdens of the student a year or two of time. This extension proved fashionable, while the coincident clinical and literary courses were never realized. All other medical schools followed with enormous laboratories and extensive laboratory courses. But to the profession these methods have proved disappointing. They monopolize the time of the student, they disparage the study of the history of the patient and all clinical observation and they utterly neglect the medical literature and send out the young doctor with a distorted sense of the probability of disease, ignorant of the experience of medicine, and armed with impedimenta of prejudice and paraphernalia of diagnostic instruments and wholly out of sympathy with the profession whose emoluments he would divide, and ignorant of the life of the community on whom he expects to subsist. All this is attested by the proceedings of our medical societies, by the columns of our medical press, and by the bag of instruments of our young medical men, and by their utter disregard of any sense of responsibility to cure the patient.

Far be it from me to disparage microscopy, enteroscopy, or even cryoscopy, but the value of the anamnesis and the immeasurable and prepondering reliability of the evidence of the master sense of touch can not safely be discredited or denied. The reader may never know the full meaning of this until personal misfortune overtakes him or his and he calls on the laboratory physician for help and finds him, hound-like, searching out with his cold and sharp nosed instruments, the stirrer up of disease, utterly regardless of the patient's need of physical support. Then will he value less highly the product of this method which is plainly marked, "made in Germany," and might be marked, because it does not fairly represent the best Teutonic product, "for exportation only." Then will appear most forcibly the truth of the Hippocratic adage, "It is the duty of the doctor to cure his patient." Our education should strive to produce less of a laboratory man than a diagnostician, less of a diagnostician than a doctor, and less of a doctor than a fellowman.

104 East Fortieth Street.

Sign of Suprarenal and Meningeal Disturbance: The White Line.—Sergent announced in 1903 that he had had occasion to observe a condition simulating meningitis in a young girl, but autopsy revealed complete cheesy degeneration of both suprarenal capsules while the meninges were intact. A white line appeared when the finger nail was drawn across the abdomen of the patient, and lasted for two to five minutes. He has since noted this white line in a number of other cases in which the suprarenals were primarily or secondarily affected, and others have confirmed his observation. Sergent has never observed the white line with an arterial pressure above 13 (Potain). It disappears on administration of adrenalin, and is evidently due to reflex spasm of the capillaries during low arterial tension with more or less dilatation of the vessels. The subject was discussed at the meetings of the Paris Société Méd. des Hôp. in February, at which some cases of the suprarenal pseudo-meningitis were reported, as also two cases of insolation in which the white line or a partially red line were noticed. In both these latter cases lumbar puncture, with removal of 20 c.c. of fluid had a marked beneficial effect, especially on the headache. The fluid was comparatively normal, but under considerable tension.

PRESSURE CLAMP FOR LATERAL ANASTOMOSIS.

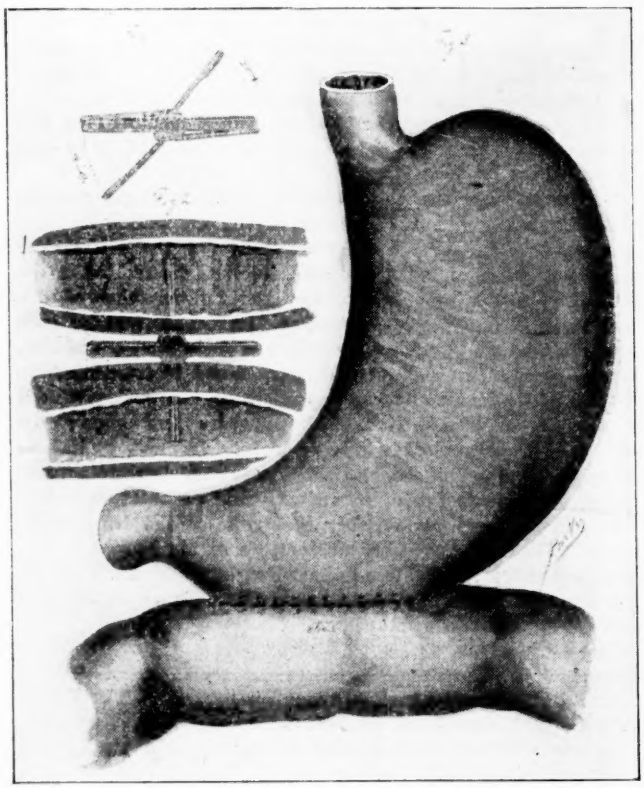
PRELIMINARY REPORT.

WILLIAM SENN, M.D.

CHICAGO.

This appliance consists of a base bar 2⅛ inches long, with cross-arms one inch in length, hinged at the center point of the bar and so arranged as to be forced down on the base by means of a spring causing pressure of about four pounds to the inch. When opened the clamp is cruciform, when the cross-arms are closed the clamp has a width of 3/8 inch and a thickness of 3/16 inch. Figure 1 shows the alternate arms partially closed.

The clamp is applied as follows: The surfaces to be approximated having been brought in apposition, the walls are punctured down to the mucous membrane (1/8 inch incision), the opened cross-arms are forced through mucous membrane into the lumen of the bowel and, with a flat probe or like instrument, used as a wedge, the cross-arms are spread and closed on the base bar, as a knife blade is closed, leaving intestinal wall between



the closed cross-arm and the base bar. The opposite cross-arms are similarly inserted into the opposing organ and closed in a like manner. A continuous Lembert suture is then applied if time permits, enclosing the clamp, which is left to slough through in a manner similar to that when a McGraw ligature is applied. This procedure is illustrated in Figure 2, the cross-arms being inserted, but not closed. Figure 3 shows anastomosis completed.

Experiments on dogs have shown that the clamp sloughs through in about seven days. An opening was left between the stomach and duodenum about 2 inches in diameter. Union was perfect, leaving a smooth mucous lining, approximation complete.

100 State Street.

THE CLIMATE OF SOUTHERN MAINE IN THE TREATMENT OF THE LATER STAGES OF HYPERTONIA VASORUM.

LOUIS FAUGERES BISHOP, M.D.

NEW YORK CITY.

The climate of southern Maine during the summer months is decidedly bracing in character, and has many advantages in the treatment of diseases of the circulation which have developed as a result of mental overwork and worry in persons otherwise healthy. These patients we sometimes speak of as cases of secondary low arterial tension, because they are suffering from a failure of the circulation secondary to vascular strain. It is, however, better to speak of them as the later stages of hypertonia vasorum, because so many while suffering from the effects of a failing circulation, nevertheless, do not exhibit at all times the low tension to which they have a strong tendency. Increased or excessive vessel tone has its origin in other conditions than organic disease of the kidneys or blood vessels.

Hypertonia vasorum of nervous origin is a distinctly modern disease, and although it has been noticed by older writers it has never been given the prominence it deserves. Patients suffering from this malady, as the result of mental strain and worry, show signs much of the time of a chronic high tension in the arteries. This is followed by cardiac hypertrophy and the train of symptoms which we all as clinicians have so often observed.

To understand how this comes about it is necessary to recognize the existence of a tone-maintaining function of the central nervous system that is constantly exercised over the peripheral circulation If such a force did not exist the blood would immediately settle to the dependent portions of the body, dilating the blood vessels, and the circulation as such would cease to exist. But any undue strain on the nervous system leads to an over-activity of this tone-maintaining function and finally develops a chronic overtone, which makes it difficult for the blood to circulate and wears out the heart by increasing resistance. Consequently there develop irregularities in the circulation and damage to the blood vessels, which frequently lead to accidents in the brain, followed by paralytic symptoms. I have seen a number of such patients presenting dilatation of the heart, general debility with decided weakness of one arm and leg, and even fairly marked aphasia, make very satisfactory progress toward recovery during a single summer on the coast of southern Maine.

My observations were made during summer practice at York Harbor. Here the climate in summer is an unusual combination of coolness and dryness. The coast recedes so that the fogs, which are so troublesome in northern Maine, and even in Rhode Island, are not frequent. The soil is such that in a short time after a rainfall it is entirely dry. Excessive heat in summer is almost unknown. The summer climate in Maine, as affording a pleasurable existence to the sojourner in hot weather, is too well known to need commendation here, but its importance as a health resort, especially for this particular class of invalids—that is of brain workers who are suffering from disorders of the circulation—should be much better known.

Free Dispensary Abuse.—The trustees of our medical charities can check the abuse by enforcing the payment of adequate fees by private ward patients and by careful investigation of out-patients.—G. W. Gay, Boston.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(A list of all accepted articles is published on one of the advertising pages of The Journal in the first issue of each month.)

(Continued from page 1185.)

AKARALGIA.

GRANULAR EFFERVESCENT SODIUM SALICYLATE COMPOUND-MERRELL.

A mixture each 8 Gm. (2 drams) of which is said to represent sodium sulphate 2 Gm. (30 grains), sodium salicylate (Merrel) 0.6 Gm. (10 grains), magnesium sulphate, 3.3 Gm. (50 grains), lithium benzoate 0.3 Gm. (5 grains), and tincture of nux vomica 0.4 Cc. (6 minims).

Dosage.—8 Gm. (2 drams) in 120 Cc. (4 ounces) of water, one-half hour before meals; in acute cases one dose every two or three hours until relieved.

Prepared by Wm. S. Merrell Chemical Co., Cincinnati, Ohio.

ANTISEPTIC-Credé.

A name applied to Silver Citrate, which see.

Manufactured by Fabrik von Heyden, Radebeul, near Dresden, Germany (Schering & Glatz, New York).

DOLOMOL.

Dolomol is magnesium stearate, $Mg(C_{18}H_{35}O_2)_2$, containing small amounts of magnesium palmitate and oleate.

It is a white powder, insoluble in water, unctuous to the touch, nearly odorless and tasteless. It is claimed to be practically free from oleate. Its magnesium content corresponds to nearly 7 per cent. MgO.

Action, Uses and Dosage.—Acting as a protective to the skin, Dolomol is recommended in cutaneous affections as a dusting powder, alone or mixed with various remedies.

The following dolomol compounds are listed: Dolomol-Acetanilid, 25 per cent.; Dolomol-Acid Boric, 20 per cent.; Dolomol-Acid Carbolic, 5 per cent.; Dolomol-Acid Picric, 25 per cent.; Dolomol-Acid Pyrogallic, 5 per cent.; Dolomol-Acid Salicylic, 5 per cent.; Dolomol-Acid Salicylic, 10 per cent.; Dolomol-Acid Tannic, 10 per cent.; Dolomol-Alum, 10 per cent.; Dolomol-Aristol, 10 per cent.; Dolomol-Balsam Peru, 10 per cent.; Dolomol-Bismuth Subgallate, 25 per cent.; Dolomol-Calendula, 25 per cent.; Dolomol-Calomel, 25 per cent.; Dolomol-Camphor, 10 per cent.; Dolomol-Chrysarobin, 5 per cent.; Dolomol-Europhen, 10 per cent.; Dolomol-Guaiacol, 5 per cent.; Dolomol-Ichthyol, 10 per cent.; Dolomol-Iodoform Deodorant, 10 per cent.; Dolomol-Menthol, 5 per cent.; Dolomol-Naphthol, 5 per cent.; Dolomol-Oil of Cade, 10 per cent.; Dolomol-Resorcin 10 per cent.; Dolomol-Salol, 10 per cent.; Dolomol-Sulphur Sub., 25 per cent.; Dolomol-Tar, 10 per cent.; Dolomol-Thymol, 2 per cent.

Manufactured by Pulvola Chemical Co., New York. Not patented or trademarked.

ELIXIR OF ENZYMES.

Eixir of enzymes is a solution containing pepsin and rennet in a menstruum containing 20 per cent. of alcohol.

Elixir of enzymes is a light yellow, palatable, liquid preparation. One part digests about 20 parts of coagulated egg albumin in 2½ hours. Eight Cc. (2 fluidrams) coagulate 500 Cc. (one pint) of milk in a few minutes.

Actions and Uses.—It is claimed to be useful as an aid to digestion and as a vehicle for various drugs.

Dosage.—4 to 8 Cc. (1 to 2 fluidrams) with meals; children in proportion.

Manufactured by Armour & Co., Chicago.

LUBRASEPTIC.

Lubraseptic is a jelly prepared from Chondrus (Irish moss) containing 2 per cent. boric acid and 0.067 per cent. formaldehyde.

The material is packed in screw cap metal tubes and sterilized by heat.

Lubraseptic is a colorless transparent jelly almost completely soluble in water. It is claimed to be absolutely sterile.

Actions and Uses.—Lubraseptic is said to be a disinfectant which is non-irritating to the skin or mucous membranes.

It is claimed to be useful as a lubricant for the fingers or for surgical instruments and as a dressing for burns, abrasions and slight lesions.

Dosage.—It is put up in collapsible tubes and it is suggested to reject the portion first expressed to make sure of the sterile condition of that used.

Prepared by Russell & Lawrie, Tarrytown, N. Y.

PERHYDROL.

THIRTY PER CENT. SOLUTION OF HYDROGEN DIOXIDE.

Perhydrol is a 30 per cent. solution of hydrogen dioxide which is free from acid.

While perhydrol is staple, dilutions of perhydrol rapidly deteriorate unless they are preserved by the addition of some acid.

Actions and Uses.—By suitable dilution a preparation is obtained equivalent to the official solution of hydrogen dioxide. An advantage is claimed for this preparation that it is less irritating on account of the absence of acid. The full strength preparation is said to be useful as an application to nevi, ulcers, gummata, etc. Diluted one-half to two-thirds, it may be applied to syphilitic ulcers, gangrenous processes, ulcerating buboes, in endometritis, suppuration of the middle ear, etc.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). U. S. trademark No. 44147.

PHENOLPHTHALEIN.

Phenolphthalein, $CO\begin{matrix}/C_6H_4\backslash \\ \backslash O /\end{matrix}\begin{matrix}/C_6H_4OH \\ \backslash C_6H_4OH\end{matrix}C = C_{20}H_{14}O_4$,

is a product of the interaction of phenol and phthalic anyhydride.

It may be prepared by heating together 10 parts of phenol, 5 parts of phthalic anhydride and 4 parts of concentrated sulphuric acid for 10 to 12 hours at 115° to 120° C. (239° to 248° F.). The product of the reaction is boiled with water, and the residue dissolved in soda lye. From this solution the phenolphthalein is precipitated by the addition of acetic acid. The precipitate after washing is dissolved in six times its weight of absolute alcohol and the solution decolorized by animal charcoal. A part of the alcohol is then distilled, the mixture filtered and the phenolphthalein separated from the filtrate by the addition of water.

Phenolphthalein occurs as a crystalline or amorphous powder, white or grayish-white, melting at 250° to 253° C. (482° to 487.4° F.). It is soluble in 600 parts of water and in 10 of alcohol. Its solutions in acid liquids are colorless, but turn red when the liquid is alkaline. The red color of the solution disappears if it is boiled with zinc dust, phenolphthalin, $C_{20}H_{16}O_4$, being formed.

Phenolphthalein heated on platinum foil should burn, leaving no residue.

Actions and Uses.—Phenolphthalein acts as a purgative, but appears to possess no further physiologic action. A case of poisoning from taking 1 Gm. (15 grains) is reported.

Dosage.—For adults the average dose is 0.1 to 0.2 Gm. (1.5 to 3 grains) given as powder, in cachets, capsules or pills. It may be given with safety in doses of 0.5 Gm. (8 grains), and these doses seem to be necessary to secure its effects in bedridden patients or in obstinate cases.

SILVER LACTATE-Credé.

A name applied to Silver Lactate, which see.

Manufactured by Fabrik von Heyden, Radebeul, near Dresden, Germany (Schering & Glatz, New York).

(To be continued.)

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SATURDAY, APRIL 20, 1907.

SPIROCHETES IN SO-CALLED MOUSE CARCINOMA.

The observation by Gaylord[1] and also by Calkins[2] that spirochetes occur in transplantable cancers in mice at once raises many interesting questions. Gaylord has demonstrated by means of Levaditi's silver method a characteristic spiral organism in the sections of ten consecutive spontaneous carcinomas of the breast in mice from Massachusetts, Ohio and New York. The same organism was found in transplanted tumors from all these sources.

In fresh material the organism is not readily demonstrable, but when found it is frequently motile. In the primary tumors the organisms are most numerous in the most actively growing parts where they occur in the stroma between the epithelial cells of the tumor and at the margins of the latter. In transplanted tumors they are found between the cells and in the connective tissue at the growing edge. The more malignant, i. e., rapidly growing, the tumor the greater the number of the organisms. Calkins proposes the name *Spirocheta microgyrata gaylordi* for this organism, which he regards as a variety of Löwenthal's *Spirocheta microgyrata*, described in 1906 in ulcerated human carcinoma, in a dog tumor, and in feces. Calkins, in New York City, has found the same spirochete as Gaylord in a spontaneous mouse tumor. It may be recalled that Borrel[3] in 1905 observed spirochetes in mouse tumors, to which, however, he does not appear to have given any further attention. Other similar observations have been recorded also.

Gaylord makes this remark: "Our observations do not as yet establish an etiologic relationship between this organism and cancer of the breast in mice, but the presence of the organism in primary mouse cancer, with which it is regularly transplanted through many generations, greatly increasing in number as the tumors increase in virulence, instead of interfering with, and finally preventing, transplantation as do bacteria, is suggestive." This certainly is a conservative conclusion. Much further work by many investigators in different places is necessary to settle the question of the relation of this spirochete to mouse cancer, and it is quite safe to predict that a large part of the experimental cancer investigation in the immediate future will be given to the solution of this question. We may expect, in the near future, to see a flood of literature on this phase of cancer.

The possibility that mouse cancer may be a spirochetal infection throws new light on many phenomena observed in the course of the enormous work in the transplantation of these growths. Heretofore, the results being viewed from the standpoint of the malignant tumors in man, such things as spontaneous healing, natural and acquired resistance and similar conditions have appeared explainable only by more or less farfetched hypotheses. But if looked at from the microbic point of view, these phenomena become readily explainable in the more familiar terms: resistance, susceptibility, healing, and immunity in infections.

Naturally the results of future work on mouse tumors will be awaited with the keenest interest. It is not wise to apply purely anticipatory investigative results to human cancer. This much may be said, however: If mouse cancer, so-called, be shown to be of spirochetal origin, that would not necessarily mean that human malignant tumors are also spirochetal growths. The demonstration that growths in animals corresponding in certain essential points to human cancer are of infectious origin naturally would give strong support to the so-called parasitic theory of cancer. Nevertheless, the one fact (to mention only one) that the cancerous growths have been found without exception to be transplantable only within the species in which they arise spontaneously indicates that the causative agent, whatever its nature, in each case is peculiar to the species in question.

1. Jour. of Infect. Dis., 1907, iv, 155.
2. Ibid., 171.
3. Comp. rend. de la Soc. de Biol., 1905, lviii, 770.

THE PHYSIOLOGIC ACTION OF ALCOHOL.

The social and hygienic evils connected with the abuse of alcohol, as well as its application in therapeutics, render important any new facts concerning the effects of this agent on the processes of metabolism. While in moderation it may be indulged in for long periods without apparent impairment of the general health, its excessive use is undoubtedly attended with functional and organic changes of a pathologic character.

It was long held that alcohol in moderate doses acted as a specific in "conserving the tissues," or, in other words, it checked metabolic waste. With the knowledge that it is oxidized in the body, it was recognized as a source of energy, and the view became generally accepted that it acts to some extent also as a food, thus sparing to a certain degree the proteid constituents of the body itself.

There appears, however, to be a diversity of opinion regarding its influence on the oxidation processes when taken in small repeated doses, and its exact value as a food is now questioned. Although much study has been devoted to a solution of the problem, the results have hitherto been meager.

The Hygienic Laboratory[1] of the Public Health and Marine-Hospital Service has just issued an interesting and valuable report of studies on experimental alcoholism conducted by Dr. Reid Hunt, chief of the Division of Pharmacology of that institution. Experimental evidence is presented showing that extremely moderate amounts of alcohol when administered even for a short period may produce profound changes in metabolism, which, under certain circumstances, are deleterious in character.

Hunt's first series of experiments were made with animals that had been fed on oats soaked in alcohol. After a variable time these animals were given doses of acetonitrile, a substance which may be considered chemically as hydrocyanic acid in which the hydrogen atom has been replaced by the methyl group. This agent owes its physiologic activity to the liberation of hydrocyanic acid, and if this liberation is hastened its poisonous effects evidently become more manifest.

It was found that a hypersusceptibility to this poison had developed in the alcohol animals, as they succumbed to doses very much smaller than necessary to produce death in controls. This susceptibility was undoubtedly due to the continued ingestion of alcohol, as in all other respects the conditions of the animals were identical.

As alcohol is easily oxidizable in the body, it seemed reasonable to suppose that its continued use would increase the oxidizing power of the body—in other words, that tolerance is thus established.

These experiments show that this really does occur and that its continued administration also increases the power of the body to break up other alcohol groups, the methyl group of the acetonitrile being oxidized more readily in alcohol animals with a resulting increased liberation of hydrocyanic acid.

A second series of experiments is given showing that guinea-pigs fed on alcohol when given acetonitrile excrete more sulphocyanate, the formation of which from acetonitrile seems to be a protective reaction on the part of the body against this poison. This increased excretion is taken as further evidence that, under the conditions maintained in these experiments, there is a corresponding increase in the liberation of hydrocyanic acid.

It thus appears to be clearly proved that marked changes in the processes of metabolism are brought about by the administration of alcohol in doses small enough never to have caused symptoms of intoxication and that these changes are probably due to modification of the oxidation processes in the body.

Such changes do not follow the administration of the carbohydrates. On the contrary, Hunt shows that mice fed on oats soaked in dextrose acquire a distinct resistance to acetonitrile, and he, therefore, points out that too much importance should not be attached to the proteid sparing power of alcohol in practical dietaries.

These views are in accord with those of Chittenden,[2] who, while he admits that alcohol in moderate doses may act as a food in the sense that it is a source of energy, denies that it is comparable with the carbohydrates, as, unlike the latter, it produces an increased excretion of uric acid, which is inimical to health.

Hunt has also shown in this report that the continued administration of alcohol markedly increases the excretion of ethereal sulphates in the urine. These latter products in all probability may be attributed to intestinal putrefaction—a condition often found in alcoholics.

The excretion of neutral sulphates was, if anything, decreased. The increased excretion of this product has been taken as a diminution of physiologic oxidation. These results, therefore, are an additional argument that alcohol has but a limited power of inhibiting oxidations.

While it is shown that the use of alcohol increases the power of the body to break up acetonitrile, modifications of the physiologic processes may not have the same deleterious effect in the case of other poisons. Alcohol is known to be a stimulant, a source of energy and heat, and the changes in physiologic functions observed by Hunt may eventually be shown to be of advantage in certain diseases.

1. Hygienic Laboratory Bulletin No. 33, Public Health and Marine-Hospital Service.
2. Med. News, vol. lxxxvi, 721.

THE EUROPEAN WAY.

Von Bergmann died the other day—but not before he was able to feel the esteem in which his fellow-countrymen, both professional and lay, held him. When recently he had attained to three score and ten his birthday was made the occasion of a national expression of very real affection. Truly, apart from his labors as scientist and surgeon, he had done the state some service. In appreciation some forty delegations called on him, bringing gifts of every kind, and they consumed over five hours in passing before him. The universities were impressively represented. He had been very zealous during three wars and had served his government in other capacities; wherefore the Ministers of War and of Education were present to make acknowledgement of these debts. Men notable in the arts, in music and the drama paid tribute to his profound sympathies and culture, such as are characteristic of the highest type of German scholarship. Four important works were published in commemoration of this great birthday. He was probably most touched by the fact that, at a banquet held on the invitation of the Berlin Medical Society, and attended by over 500 distinguished people, his wife and daughters being present, were toasted in recognition of what they (*das Ewig Weibliche*) had done for him and through him for humanity.

A Parisian newspaper recently propounded the question: Who are the ten greatest Frenchmen of the Nineteenth Century? Fifteen million votes were recorded, Pasteur heading the pool with 1,300,000 votes—a majority of 100,000 over Victor Hugo, who was second;

among these ten were also Curie and Roux; the great Napoleon was fourth. Evidently, then, science holds a high place in the esteem of the French people; they seem, over there, to be really grateful to the man eager to relieve suffering and to prolong life.

Berthelot, chemist and statesman, died recently in Paris under affecting circumstances. Coming home he found that his venerable wife had died suddenly; he went into his study and, evidently overwhelmed by the shock, presently himself expired. The noble pair were laid in state in the Panthéon in the presence of a great assemblage, including President Fallières, the cabinet ministers, the diplomatic corps, members of the French Academy, judges, deputies, senators and deputations from the learned societies. M. Briant, Minister of Education, took part in the imposing ceremonies, relating in an impressive speech the dead senator's achievements in chemistry and other sciences. When the orations were concluded all the troops composing the garrison of Paris defiled before the catafalque, and on that day every school in France was closed.

Here were three tributes to three great men of science. What was said of Berthelot was said also of Pasteur, and applies equally well to von Bergmann: "The man in him transcended the scientist and made him as beloved as he was eminent."

The point is that these great men were and are in memory affectionately appreciated by their countrymen. This is evidently the European way—which does not seem to be the American way. Possibly we have not yet evoluted to that degree of civilization. By way of contrast we might note that among us, as in Paris, the question has been propounded: Who are the ten greatest living Americans — statesman, soldier, sociologist, preacher, author, railroad expert, athlete, educator, lawmaker and conversationalist? Who these ten are we are not informed; we observe, however, with mortification, that no curiosity has been manifested concerning the greatest American physician. Even the greatest American scientist has been left most dismally out in the cold.

THE DIGESTIVE ACTION OF LEUCOCYTES.

The important rôle played by leucocytes in removing and dissolving dead tissues, pneumonic exudates, foreign bodies, etc., depends on the powerful digestive enzymes which they contain, and which are liberated from the bodies of the leucocytes on their disintegration. Although all cells seem to be equipped with similar proteid-digesting enzymes, yet in the fixed tissues these seem to be relatively feeble, for under most pathologic conditions absorption goes on very slowly or not at all unless leucocytes are present, and the rate of digestion or absorption varies directly with the number of leucocytes. To illustrate: A tuberculous lesion may contain large areas of necrotic tissue which persist for a long time; but if some chemotactic substance is injected into these areas (e. g., iodoform emulsion), the invading leucocytes promptly digest the dead tissue and remove it. It may be added, parenthetically, that many instances of supposed suppuration following such injections into tuberculous areas do not depend on pus infection, but on this liquefactive action of the leucocytes. As absorption of dead tissues and exudates is such an important process in medicine and pathology, recent studies into the nature of the enzymes of the leucocytes possess more than theoretical interest.

The chief studies on this subject have been made by E. L. Opie[1] in the Rockefeller Institute, and have yielded many interesting results. In the first place, it has been demonstrated that the chief proteid-splitting enzyme of the polynuclear leucocytes is quite different from the proteid-splitting enzymes of nearly all the other cells of the body, for the enzymes of the polynuclear leucocytes act best in a faintly alkaline medium, whereas the ordinary cellular enzymes act best in an acid medium, and little or not at all in alkaline fluids. The mononuclear leucocytes and the lymphatic tissues from which they come seem to contain chiefly enzymes which, pepsin like, require an acid medium. Apparently the only fixed tissue which contains enzymes acting best in alkaline media is the bone marrow; this chemical observation supports the microscopic evidence that the polynuclear leucocytes arise in the bone marrow, while the mononuclears come from the spleen and lymph glands. The fact that the proteid-digesting enzymes of our fixed tissues require an acid medium for their action, would suggest that the failure of living tissues to digest themselves depends on the "alkalinity" of the blood, and it is possible that this explanation is of some importance. But that being so, the question arises: What holds the leucocytic enzymes in check if they are best adapted to an alkaline medium? The apparent answer to this seems to lie in the observation that in the normal blood plasma there is contained a substance which has the power of holding the leucocytic enzymes in check. This "anti-enzyme" is present in but limited amounts, it would seem, and hence when large numbers of leucocytes accumulate and disintegrate they may over-saturate the amount of anti-enzyme present and digest any dead proteids that may be at hand. It is also quite possible that in infected or necrotic areas substances form which neutralize or destroy the anti-enzymes, and thus permit the leucocytes to begin their digestive action.

The antagonistic action of these two constituents of the blood affords an instance of the way in which vital processes are held within certain suitable limits by means of balancing one action against another. As an instance illustrating the effects of the balancing of leucocytic enzymes by the anti-enzymes of the serum in a special case, may be mentioned the conditions observed in the rabbit. It is well known by laboratory workers that infection with pus microbes in rabbits does not usually produce the creamy pus seen in human infections, but

1. Literature will be found in the Jour. Exp. Med., 1907, ix, 207.

rather a solid cheesy mass of leucocytes and dead tissues is formed. This is explained by the fact that rabbits' leucocytes contain but a feeble proteid-digesting enzyme, while rabbits' blood serum is rich in the anti-enzymes; hence digestive softening of the necrosed cells does not readily take place.

THE MEDICAL EXPERT.

If any further data are necessary to convince the most conservative that changes are needed with regard to expert testimony in our courts, the proceedings in the recent Thaw trial will certainly furnish them. Here weeks of time were consumed by the clashing of the alienists and the wrangles over their testimony; yet nothing could have been more futile or inconsequential than that testimony.

A juryman has graphically recorded his impressions and in terms singularly just. In examining one expert the attorney for the people displayed "an amazing grasp of an intricately technical subject." The prosecutor is not, of course, a medical man; yet his knowledge of a matter essentially medical was manifestly much greater than that of the unhappy witness, and the proceedings were strongly suggestive of "a cat playing with a mouse." Another alienist appeared, from the jury box, to be "one of those rare souls who are unconscious of time, since they inhabit eternity, and as his incumbency of the stand dragged through session after session the humor of the situation began to appeal even to the impatient twelve. After various imposing and impressively qualified alienists had promptly answered 'rational' to a hypothetical question an hour and a quarter long, various other equally imposing alienists with equally impressive qualifications answered the same question quite as promptly with the word 'irrational'." It seemed to this juryman time wasted to have placed these experts on the stand to give answers so foreordained; they might best have been stood up in line and cancelled in pairs so that by a sort of *reductio ad absurdum* it might be seen by the remainder which side to credit.

The chief point at issue in this case turned on the question of the defendant's sanity. Yet here the jury seemed to pay no attention whatever to the opinions of the experts, who about evened up, as the juryman put it. These laymen judged the matter of sanity quite for themselves, and on what they deemed common sense principles.

What physician will not be mortified by this editorial observation in the New York *Sun:* "Nor do we purpose to waste any time on the great mass of expert testimony for or against the prisoner. Suffice it to say that in this murder case, in which a liberal purse has been at command, alienists of more or less prominence were produced who testified that Thaw at the time of the killing was insane or did not know that the murder was wrong. On the other hand, many experts of equal or greater eminence produced by the District Attorney swore that Thaw was sane at the time."

The subject of medical expert testimony demands drastic revision. Were it not best that we undertake this revision among ourselves, lest, to our humiliation, the laity, through legislative bodies, take the matter quite out of our hands? There are many views expressed and many plans suggested. Those which should prevail must be based on the position that alienists should no longer be medical advocates for the side which retains them; they should no longer be aligned, as partisans, with their respective legal counsel.

THE MOLOKAI LEPER SETTLEMENT.

The territory of Hawaii has the best organized and most extensive institution for dealing with leprosy in existence. Segregation was first attempted in 1866 in the establishment of the leper settlement on Molokai island. The administration, while at first disliked, has increased in popularity. Many lepers come voluntarily for examination; others receive from the board of health an invitation which is practically an order. All the patient's or suspect's expenses to and from the examining station at Honolulu are paid by the government. The board of examiners consists of five physicians, one of whom is bacteriologist to the board of health and another skilled microscopist known as assistant bacteriologist. Attempts at the curative treatment of leprosy have been many, and several imagined specifics have been tried at the settlement, but so far with uniformly unsuccessful results. Medical treatment is carried on by a resident physician and his assistant and is frequently of much benefit even though not curative. Surgical operations are performed more frequently than formerly and meet with considerable success. While some lepers or suspects have been granted the privilege of re-examination and of return to their homes, of late years they have preferred to remain on the island, where they are assured of a comfortable living and better social privileges than they could enjoy in their homes. The United States Leprosy Investigation Station is within the borders of the settlement, and it is hoped that its work will throw new light on this mysterious disease. The problem of the disposal of the children born on the island or left by leprous parents has been partly solved by a girls' home under the care of the Sisters of St. Francis, and it is proposed to establish a similar home for boys, which may give the non-leprous children of leprous parents an industrial education fitting them for a useful life. It is proposed by L. E. Pinkham, president of the board of health, that dairy farming be taught these boys as a branch of agriculture needing development in the islands.

THE TRANSFORMATION OF DIABETES MELLITUS INTO DIABETES INSIPIDUS.

The peculiarities of diabetes mellitus in elderly people are, some of them, well known and usually recognized. The fact that the glycosuria may disappear under the influence of a complicating nephritis and may never return has long been known, and is very characteristic of a certain type of case. The disappearance of the sugar with the continuance of the polyuria is not so

common, as Teschemacher[1] has pointed out. Although the polyuria does not always go hand in hand with the glycosuria, as, for example, in the so-called diabetes decipiens, yet this is the rule, and in most patients when the glycosuria diminishes the amount of urine likewise becomes less. Teschemacher cites several cases in which the glycosuria disappeared, even with the patient on a mixed diet, but the polyuria, with thirst and debility, persisted. The patient thus presented at this stage the picture of diabetes insipidus. Similar cases have been recorded before, and have been described as examples of a transition from one disease into the other. That this is a proper interpretation is doubtful, for, as in one remarkable case cited by Teschemacher, the sugar may reappear after a long period of years. So far as the clinical aspects of such cases are concerned they are finally diabetes insipidus. These patients must not be confounded with diabetics who develop chronic interstitial nephritis with polyuria, in whose urine there is so little albumin that it is readily overlooked.

USING THE FOOD AND DRUGS ACT TO MISLEAD.

We have previously called attention to the use which some of the food and drug manufacturers and promoters are endeavoring to make of the guarantee clause of the national Food and Drugs Act. The matter has become of sufficient importance to attract the attention of the Secretary of Agriculture, who has issued a statement on the subject. He says: "A serial number and the statement that a food or drug is 'guaranteed under the Food and Drugs Act, June 30, 1906,' does not mean that the United States Government guarantees the purity of the article or guarantees that it is what the label says it is. It simply means that the manufacturer guarantees it to be pure and free from adulteration and that he warrants every fact stated on the label to be true. The government assumes no responsibility for the guarantee. On the contrary, the serial number is assigned to fix the responsibility where it belongs—on the manufacturer—and to protect innocent dealers. Such advertising as 'after Jan. 1, 1907, the United States Government will protect you by an official serial number,' or statements that the food product is 'approved by the pure food commissioners,' must be stopped at once. If this outrageous misrepresentation does not cease the department will publish a list of the manufacturers who are indulging in this campaign of deception. Manufacturers who are deceiving the public about the guarantee will lie about the quality of their products. The pure food law is going to be administered fairly. Its primary purpose is to protect the consumer." It is to be hoped that this public announcement of the facts in the daily press will put a stop to the brazen and unjustifiable efforts on the part of a certain class of manufacturers to make capital out of the very means that have been devised for restricting them and for preventing them from deceiving their customers. Certain drug firms, for instance, have announced in large letters that they were among the first ten firms to file their guarantees, intimating that there was some particular virtue in such a proceeding. These tactics are intended to deceive, and do deceive, those who are not conversant with the provisions of the law.

1. Münch. med. Wochschr., March 19, 1907.

Medical News

ALABAMA.

Quarantine Is On.—Nominally the quarantine season at Mobile began April 1. Dr. Edward Francis, who is in charge at Fort Morgan, will have personal charge of the entire quarantine plant.

Senn in Mobile.—At the annual meeting of the Medical Association of the State of Alabama, the Jerome Cochrane lecture was delivered April 17, by Dr. Nicholas Senn, Chicago, whose topic was "The Final Triumph of Scientific Medicine."

Society Meeting.—At the annual meeting of the Coosa County Medical Association, held April 2, Dr. William A. Holloway, Lauderdale, was elected president; Dr. Cecil K. Maxwell, Kellyton, vice-president, and Dr. Eugene Argo, Goodwater, censor.

College Notes.—The trustees of the University of Alabama, at a session in Tuscaloosa, took over the Medical College of the University of Alabama, Mobile, and discussed plans for the improvement of the university.——The commencement exercises of the Medical Department of the University of Alabama (Mobile Medical College) were held April 15, when a class of thirty was graduated. The dean of the faculty, Dr. Rhett Goode, delivered the address and the president, J. W. Abercrombie, of the University of Alabama, presented the diplomas to the graduates.——Birmingham Medical College graduated a class of fourteen April 4. T. G. Bush delivered the address of the evening. Dr. Benjamin L. Wyman, dean of the college, presented the diplomas and Dr. R. M. Cunningham delivered the charge to the graduates.

ARIZONA.

To Safeguard Health in Territory.—Dr. James W. Coleman, Tucson, recently appointed superintendent of public health for the territory, has sent out letters to the different clerks of the county boards of supervisors, asking their cooperation in the concerted effort he is endeavoring to make against contagious diseases and their needless spread.

Society Meeting.—The Maricopa County Medical Society, at its annual meeting, held in Phoenix, April 6, elected the following officers: President, Dr. James M. Swetnam; vice-president, Dr. John W. Foss; secretary-treasurer, Dr. Elmer C. Bond; delegate to the territorial association, Dr. Ancil Martin; alternate, Dr. John W. Foss, and censors, Dr. William I. Simpson, Otto E. Plath and John W. Thomas, all of Phoenix.

ARKANSAS.

"Drummers" Fined.—Dr. James Anderson, Hot Springs, pleaded guilty on March 28 to violating the local anti-drumming ordinance. He was fined $25 and his license revoked.——Dr. W. W. Mercer, Hot Springs, on April 8, was fined $100, and his license revoked on account of violation of the anti-drumming ordinance. He gave notice of appeal.

Society Meetings.—The Garland County-Hot Springs Medical Association at its regular monthly meeting, April 2, elected the following officers: President, Dr. Oliver H. Burton; vice-presidents, Drs. Albert H. Tribble and Morgan F. Mount; secretary, Dr. Joseph S. Horner; treasurer, Dr. Randolph Brunson; delegates to the state association, Drs. Arthur U. Williams and Frank W. Jelks, and alternates, Drs. Oliver H. Burton and Eugene C. Hay, all of Hot Springs.——At the annual meeting of the Howard County Medical Society, held in Nashville, Dr. Cadwalader W. Wright, Buck Range, was elected president; Dr. Evan M. Black, vice-president; Dr. William H. Toland, Mineral Springs, secretary-treasurer; Dr. David A. Hutchinson, Nashville, delegate to the state society; and Dr. James M. Daly, Nashville, alternate.——The physicians of Siloam Springs have organized what is to be known as the Physicians' Post-Graduate Medical Club.

CALIFORNIA.

Hospital News.—Drs. Charles C. and Curtis O. Falk have opened temporary quarters for the Marine View Hospital in the old Murray Hospital, Eureka.——The Bird Haven Home for the Feeble Minded and Incompetent has been incorporated at San Jose with a capital stock of $75,000.——The new Southern Pacific Hospital, San Francisco, is to be constructed of reenforced concrete and will have accommodation for 200 patients.

COLORADO.

Society Election.—The Woman's Medical Society of Denver, at its annual election, April 5, elected Dr. Laura L. Liebhardt, president, and Dr. Mary Hawes, vice-president. Dr. Eleanor M.

Lawney, the retiring president, gave an address on "Causes of Death."

State Board Officers.—The State Board of Health at its first meeting, April 8, organized for the biennium. Dr. William H. Davis, Denver, was elected president; Dr. Minnie C. T. Love, Denver, vice-president; Dr. Hugh L. Taylor, Denver, secretary, and Dr. Frank N. Carrier, Canon City, treasurer.

Reappointments.—Dr. Matt R. Root, Denver, has been reappointed surgeon-general of the Colorado National Guard, and Dr. Samuel B. Scholz, Denver, inspector general.——Drs. Seymour D. Van Meter, Carey K. Fleming, and T. Willis Miles, all of Denver, have been reappointed members of the Seattle Board of Medical Examiners.

CONNECTICUT.

Sanitarium Burned.—The Grand View Sanitarium, South Windham, was destroyed by fire early on the morning of April 6. There were 16 patients in the institution at the time, one of whom was burned to death.

Gifts to Medical School and Hospital.—By the will of the late Gen. Samuel E. Merwin, New Haven, $5,000 is devised to Yale University for the use of the medical school and $25,000 is bequeathed to the New Haven Hospital.

Elections.—At the monthly meeting of the Celtic Medical Society of Waterbury, held March 25, Dr. Bernard A. O'Hara was elected president, vice Dr. Edward W. McDonald, deceased, and Dr. Thomas J. Kilmartin, vice-president, to fill vacancy.——At the annual meeting of the New London County Medical Society, held in Norwich, April 4, the following officers were elected: President, Dr. Harry M. Lee, New London; vice-president, Dr. Morton E. Fox, Uncasville; clerk, Dr. Edwin C. Chipman, New London; delegates to the state society, Drs. George R. Harris, Norwich, and Carlisle F. Ferrin, New London; councilor, Dr. Edward P. Brewer, Norwich; county reporter, Dr. Patrick J. Cassidy, Norwich, and censors, Drs. Charles E. Brayton, Stonington; William Witter, Norwich, and Lewis S. Paddock, Norwich.

GEORGIA.

Personal.—Dr. Francis M. Ridley, La Grange, has been appointed surgeon of the La Grange Division of the Atlanta, Birmingham & Atlantic Railway.——Dr. William C. Pumpelly, Macon, has been seriously ill with pneumonia.——Drs. James B. Baird and William S. Elkin have resigned from the medical staff of Grady Hospital, Atlanta.

Hospital Notes.—It is reported that the officers and employés of the Southern Railway will build in Atlanta a hospital to cost $200,000, for the treatment of railway men and their families, as a memorial to the late Samuel Spencer, president of the road.——St. Mary's Hospital has been established in Athens by Drs. Henry M. Fullilove and J. Peebles Proctor.

Children and Teachers to be Examined.—At a recent meeting of the ordinance committee of the City Council of Atlanta it was decided to report an ordinance requiring the medical examination of all pupils and teachers of the public schools once a year, the examination to be made by a ward physician, except where a parent or guardian prefers the services of the family physician.

IDAHO.

Personal.—Dr. Hugh V. Scallon has been elected mayor of Cœur d'Alene.——Dr. Hugh France, Wardner, has been appointed physician of Shoshone County.

Epidemic Diseases.—The public school of Genesee has been closed on account of the prevalence of mumps, measles and chickenpox.——A number of cases of smallpox discovered in Wallace has caused the suspension of all public meetings in the city until further notice.

Society Meeting.—At the annual meeting of the South Idaho District Medical Society, held in Boise, April 4, the questions of prophylaxis of tuberculosis and insurance examination fees were discussed. The following officers were elected: President, Dr. Jesse C. Woodward, Payette; vice-president, Dr. Adolph Blitz, Boise; secretary-treasurer, Dr. John M. Taylor, Boise; members of the executive committee, Drs. James A. Young, Caldwell and William B. Lyman, Boise. The society endorsed the candidature of Dr. Edward E. Maxey, Boise, for secretary of the State Board of Health, and of Dr. Orfila J. Allen, Bellevue, as a member of the State Board of Medical Examiners.

ILLINOIS.

Personal.—Dr. William R. Parkes has been reappointed health commissioner of Evanston.——Dr. Wilfred H. Gardner, Bloomington, has gone to Germany.

Interne Examination.—An examination was held April 11 at Cook County Hospital, for interneships at the Cook County Institutions, Dunning. The board was composed of Drs. William L. Baum, O. C. Willhite, Charles E. Kahlke, John D. Robertson and J. B. Caldwell.

Hospital Notes.—Riverview Hospital, Kankakee, was opened to receive patients March 25. Dr. James Dougherty, Chicago, is house physician of the institution and the attending staff is made up of Kankakee County practitioners.——The Oak Park Hospital was formally opened by Bishop Muldoon, April 4, Dr. John W. Tope representing the hospital staff.

Legislative Notes.—The osteopathic bills (house 318 and 319), are on the order of second reading in the House of Representatives. No hearing seems to have been given on these bills in the committee. The osteopaths behind these bills are making a determined effort to force their passage, but the legislative committee of the Illinois State Medical Society and the Illinois State Board of Health are making an equally determined effort to see that they shall not pass.——The antivivisection bill (senate 267) is now on first reading in the House of Representatives.——The optometry bill (now house bill 845) is on second reading in the house.——The medicine peddlers' bill (senate 341 and house 474) are still in the house committee on license of the house, in which it is believed they will remain.

Chicago.

New Health Commissioner.—A committee of physicians requested by the mayor to select a candidate for health commissioner, at an adjourned meeting, April 13, fixed on Dr. William A. Evans for that position. Mayor Busse has appointed him to the office.

Howard Kelly in Chicago.—The Nicholas Senn Club had as its guest of honor, April 15, Dr. Howard A. Kelly of Johns Hopkins University, Baltimore, who read a paper on "The Recent Advance Work on Genitourinary Affections." Among the speakers were Drs. Henry T. Byford, Emil Reis and Franklin H. Martin. Dr. Lucy Waite acted as toastmaster.

Memorial Hospital.—The Council of the Chicago Medical Society, at a meeting, April 9, unanimously endorsed the establishment of an emergency hospital in the central portion of the city, to be known as the Iroquois Memorial Hospital. The hospital is to be, save in name, a branch of the Cook County Hospital, and in return for the use of its name, the Iroquois Memorial Association has agreed to contribute the $25,000 already collected and such other sums as may be raised by members of the association.

Personal.—Dr. Joseph B. DeLee has gone to Europe for a four months' trip.——Dr. Clarence L. Wheaton delivered the public address on tuberculosis, April 15, at Shelbyville, under the auspices of the Shelby County (Ind.) Medical Society.——Dr. Gustavus A. Fischer was robbed of his watch and $6 in money, April 10.——Dr. Horatio S. Brewer was seriously injured by a collision with a street car, April 10, while pursuing pickpockets who had robbed him.——Dr. Charles S. Bacon returned April 13 after a two months' trip abroad.

Mortality Still High.—During the week ended April 13, 717 deaths were reported, equivalent to an annual death rate of 17.74 per 1,000. Of the 31 deaths in excess of those reported during the previous week, 12 of the decedents were under one year of age and 15 over 60 years of age. The death rate represented an increase of 4.5 per cent. over the preceding week and of 15.04 over the corresponding week of 1906. Pneumonia caused 132 deaths; consumption, 73; heart disease, 60; violence, including suicide, and nephritis, each 51; acute intestinal disease, 41, and cancer, 36. Of the communicable diseases, scarlet fever caused 9 deaths; measles and diphtheria, each 8; whooping cough, 6; typhoid fever, 5, and influenza, 3.

INDIANA.

Communicable Diseases.—The postmaster at Lakeville is ill with smallpox and the postoffice is under quarantine.——On account of the prevalence of scarlet fever, the grade schools in Petersburg have been ordered closed.

Personal.—Dr. Walter N. Fowler, Bluffton, sailed for Paris, March 28, to join the Walter Wellman expedition to the Arctic.——Dr. James W. Squires, Fort Wayne, who was operated on last week, is reported to be convalescent.

Physicians' Building.—An office building, five stories high, is to be erected, at a cost of $100,000, at Meridian and New York Streets, Indianapolis. The building is to be used exclusively for offices for physicians and dentists.

Library Association Formed.—At a recent meeting of the Fort Wayne Medical Society, the Fort Wayne Medical Library Association was formed, with Dr. George W. McCaskey as president, Dr. Benjamin P. Weaver, secretary, and Dr. Alfred L. S. Kane, treasurer.

IOWA.

Local Society Organized.—At a meeting of the physicians of Fort Madison, March 26, a local medical society was organized, with Dr. Frank C. Roberts, president, and Dr. William C. Kasten, secretary.

Personal.—Dr. Charles Palen has been re-elected city physician of Dubuque.——Dr. Joseph M. Emmert, Atlantic, has been nominated by the governor as a member of the Board of Pardons and Parole.——Dr. Frederick Albert has been appointed city physician of Mason City, vice Dr. Channing E. Dakin.

Tuberculosis Bills.—The bill appropriating $50,000 for the completion of the main building for the hospital for consumptives at Sanitarium, near Iowa City, has been passed by the legislature. The bill includes an annual appropriation of $5,000 for the dissemination of literature on tuberculosis.

MARYLAND.

Banquet of the University Alumni.—The first banquet of the General Alumni Association of the University of Maryland was held in Baltimore, April 10. Among the medical speakers was Dr. E. Miller Reed. The proposition for a University Club met with much favor, and a committee of 100 was appointed to raise an endowment fund.

Hospital for Colored Patients.—The Union Hospital Association, an association of colored people of Frederick, has purchased and equipped, at a cost of $30,000, a building soon to be opened as a hospital. The house has eight rooms, two of which will be used as public and four as private wards. The operating room is supplied with the equipment of the Emergency Hospital, which has ceased to exist. Dr. William G. Bourne, Frederick, is house physician.

Baltimore.

Fulton Resigns.—Dr. John S. Fulton, for ten years secretary of the State Board of Health, has resigned to become secretary of the International Conference on Tuberculosis. He will make his headquarters at Washington, D. C.

Hospital Report.—The report of St. Joseph's Hospital for 1906 showed that during the year 2,525 patients were admitted, all but 898 of which were free patients. The percentage of deaths was 4.75. In the dispensary 9,811 patients were treated and 10,050 prescriptions were filled.

State Society Meeting.—The one hundred and ninth annual meeting of the Medical and Chirurgical Faculty of Maryland will be held in Baltimore, April 23 to 25. The subject of the address of the president, Dr. Hiram W. Woods, will be "The Medical and Chirurgical Faculty; Its Debts to Itself and the Public." The annual oration will be delivered by Dr. George H. Simmons, Chicago, on "The Campaign Against the Domination of Therapeutics by Commercialism." A special meeting is to be held after the oration, the object of which is to set before the members the need of a new faculty home and the means of obtaining it. The subject will be presented by Dr. Edward N. Brush, chairman of the building committee, and Dr. Robert W. Johnson, chairman of the council. At the afternoon session, April 25, there will be a joint meeting of the Maryland State Conference of Charities and the Maryland State Conference of Womens' Clubs. At this session the social evil will be discussed by Dr. Prince A. Morrow, New York, whose subject will be "The Prophylaxis of Social Diseases." Dr. Lilian Welsh will speak on the "Prophylaxis of Social Disease in the Home," and Dr. Charles B. Emerson, who will take up the "Duty of the Organized Medical Profession in Fighting the Social Evil." The annual banquet will be held in Faculty Hall on the evening of April 25.

MASSACHUSETTS.

Supreme Court Sustains Verdict.—The Supreme Court of Massachusetts has sustained the verdict of $1,700 obtained by Dr. John Fitzhugh, Amesbury, against the Boston & Maine Railroad for injuries received by the plaintiff at a railroad crossing in Amesbury.

Hospital Wing Opened.—The new surgical wing of the New England Deaconess' Hospital, Longwood, Boston, was opened with appropriate ceremonies April 8. The new building has a capacity for 44 patients and is furnished with a double suite of operating rooms. The property as it now stands has cost $150,000, and $30,000 additional is necessary to cover the cost of the completed and equipped building.

Gifts to Hospitals.—By the will of the late Jabez K. Montgomery, $5,000 is bequeathed to the Rufus S. Frost General Hospital, Chelsea.——The late Eliza D. Dodge, Worcester, in her will gave $5,000 to the Worcester Memorial Hospital and $1,000 to the Baldwin Hospital Cottages.——By the will of the late Mrs. Eliza Orne Ropes, $5,000 is bequeathed to the Salem Hospital.

Medical Men Organize.—The Boston Society of Examining Physicians and Surgeons was organized April 3, at a meeting of a number of physicians connected with different semi-public corporations and life insurance companies. The following officers were elected: President, Dr. Francis D. Donoghue; vice-presidents, Drs. Frank E. Allard and Edward M. Greene; secretary, Dr. Charles T. Cutting, and treasurer, Dr. Charles O. Kepler.

Smallpox.—At Lawrence seven additional cases of smallpox have developed, making a total of 38.——The 15 immigrants who were detained on the arrival of the steamship *Cymric*, on account of smallpox, have been released from the detention hospital.——Seven new cases of smallpox have been discovered in Chelsea, and the isolation hospital now contains eight patients. All the cases are said to be directly traceable to the epidemic at Lawrence.

Personal.—Dr. S. Alphons Daudelin, Worcester, has been selected as United States commissioner at the International Maritime Exposition, Bordeaux, France.——Dr. John J. Bartley, Lawrence, has been appointed city physician, vice Dr. Timothy J. Daly.——Dr. Roy V. Baketel has been appointed school physician for Methuen.——Dr. J. William Spooner, Hingham, has been reappointed medical inspector for Plymouth County.——Dr. Joseph R. Charron has been made chairman of the board of health of Turners Falls.

MICHIGAN.

President Buhl Dies.—Theodore D. Buhl, president of Parke, Davis & Co., Detroit, died April 7.

Personal.—Dr. Walter H. Sawyer, Hillsdale, is reported to be in a serious condition from septicemia, due to an operation wound.——Dr. George E. Reycraft has been elected mayor of Petoskey.——Dr. William W. Lathrop, formerly in charge of the Jackson Sanitarium, had a narrow escape from death when his clothing became entangled in the shafting of the engine room of the institution, April 3.——Dr. Malcolm E. Smith, Grand Rapids, has started for Katalla, Alaska, where he will be house surgeon in the new Pierpont Morgan Hospital.——Dr. Robert B. Armstrong has been elected mayor of Charlevoix.

Hospital Notes.—Dr. Ernest M. Vardon has sold his hospital at Hillsdale to Dr. Arthur G. Doty, and will move to Alberta.——The Kalamazoo Hospital Association has raised already more than $11,000 of the $25,000 needed to wipe out the debt of the institution.——At a citizens' meeting of Calumet the disposal of the Ernest Bollman cash donation of $20,000 and four lots for a hospital location was considered. It is the intention of the committee to raise a like sum, that a hospital large enough for the needs of the community may be erected.——The State Sanatorium for Tuberculosis, Howell, was ready to receive patients April 1. It was then able to accommodate 100 patients.

MISSOURI.

Banquet to Medical Members of General Assembly.—The program for the banquet to the medical members of the Forty-fourth General Assembly of Missouri by the St. Louis Medical Society and the Medical Society of City Hospital Alumni, in recognition of the good work accomplished in state legislation, has been arranged for April 26 at 8 p. m., at the Planters' Hotel. Tickets may be had of any member of the committee and from the officers of the societies. Dr. George Homan is chairman of the committee; Dr. Adolph G. Schlossstein, treasurer; Dr. Stewart, secretary. Dr. William G. Moore will officiate as toastmaster. It is expected that the governor, the president of the senate, the speaker of the house, ten or more members of the senate and house, the presidents of all the state medical societies, and the president of the State Board of Health will be guests of honor on this occasion.

Hodgen Memorial Meeting.—Arrangements for the memorial meeting in St. Louis in honor of the twenty-fifth anniversary of the death of Dr. John T. Hodgen, a former president of the American Medical Association, to be held in the Y. M. C. A. Hall, April 28, are being rapidly perfected. Dr. Warren B. Outten will preside as chairman of the committee of arrangements. The exercises will begin at 3 p. m., and will be as follows:

Invocation, Rev. Samuel J. Nicolls.
Address, Dr. Hodgen as a National and International Figure in Medicine. Joseph M. Mathews, M.D., Louisville, Ky.
Address, His Educational Influence in the Mississippi Valley, Edward W. W. Schauffler, M.D., Kansas City, Mo.
Address, The Debt of Missouri to His Example and Memory, Charles H. Wallace, M.D., St. Joseph, Mo., president Missouri State Medical Association.
Address, His Power and Influence as a Teacher Over His Classes, Henry C. Fairbrother, M.D., East St. Louis, Ill.
Address, His Worth as a Citizen, Charles Nagel, Esq., of the St. Louis Bar.
Address, His Executive and Administrative Abilities in Public and Private Stations. Le Grand Atwood, M.D., Ferguson, Mo.

NEW MEXICO.

Railway Hospital to be Built.—It is reported that the El Paso & Southwestern Railroad Company will build a large hospital for the use of its employés at Alamogordo.

Insane Asylum Bonds Authorized.—The trustees of the New Mexico Insane Asylum, Las Vegas, have been authorized to issue bonds to the amount of $105,000 for needed improvements.

To Report Contagious Diseases.—At the March meeting of the Donna Ana County Medical Society a motion was adopted that the society strongly advise parents and good citizens immediately to report to their family physician or the health officer any or all cases of diseases of whatsoever nature, that they may be investigated and proper precautions taken.

Infirmary for Silver City.—Mr. Frank G. Thomson has presented the New Mexico Cottage Sanatorium for the Treatment of Tuberculosis with the necessary funds for the building of an infirmary. This building will complete the original scheme for the institution with the exception of a research laboratory. There are now 50 buildings of durable cement construction. Almost all of the funds needed have been presented to the institution.

NEW YORK.

State Charity Board Officers.—The State Board of Charities, at its annual meeting, elected William Rhinelander Stewart president and Stephen Smith vice-president, both of New York City.

Senate Passes Bills.—The senate has passed the medical unification bill which provides for one state board of medical examiners instead of three, as at present, and the Armstrong bill making an appropriation of $1.000 for a commission to select a site for a new state hospital for the insane.

Mary Putnam Jacobi Fellowship.—The Woman's Medical Association of New York has raised $25,000 to be used for a fellowship to bear the name of Dr. Mary Putnam Jacobi. The income of the fund will be used to pay the expenses of a woman medical student who wishes to study abroad.

Physicians' Club Organized.—At a meeting of the physicians of Newark, April 4, organization was effected and the following officers were elected: President, Dr. Augustus A. Young; vice-president, Dr. Jared A. Reed; secretary, Dr. William H. Jessup, and treasurer, Dr. Edward P. Thatcher.

Personal.—Dr. John C. Otis has been appointed commissioner of public works at Poughkeepsie.——Dr. John L. Heffron has been appointed acting dean of the Syracuse University, Medical Department, during the absence of the dean, Dr. Gaylord P. Clark, who has gone to Europe.——Dr. William D. Peckham has been appointed health officer of Utica.

To Limit Expert Testimony.—Assemblyman Moreland has introduced a bill to limit expert testimony of alienists in all murder trials where insanity is pleaded as a defense. The bill also prevents hypothetical questions being asked in any criminal case where insanity is a defense. The idea is to do away with experts who receive enormous fees and seem prone to testify as the side which retains them wishes.

Medical Legislation.—Governor Hughes has signed the following bills: The Rogers bill, making appropriations for state hospitals, by which Binghamton Hospital gets $50,000 for a new dining-room and kitchen, $81,000 for a nurses' home, and $7,500 for water supply; Middletown Hospital gets $81,000 for a nurses' home; Hudson River Hospital, $81,000 for a nurses' home; and Kings Park Hospital, $62,000 for a new laundry.—Mr. Boshart's, providing that prosecutions for penalties for violations of the agricultural law may be brought in the county where the product is exposed for sale or in the county in which the adulteration or violation occurred.—Mr. Prentice's, incorporating the society known as the Russell Sage Foundation for the purpose of maintaining a fund and applying the income to the improvement of social and living conditions in the United States.—Mr. Wainwright's authorizing Port Chester to raise a tax of not more than one-tenth of 1 per cent. for public health purposes.

New York City.

Personal.—Dr. Monta Waynefort Jamison, Middleton, has returned after an extensive tour of Europe.——Dr. Charles E. McBurney has been spending the winter in California for his health.

Competition for Hospital Positions.—Four salaried positions on the resident staff of the Seton Hospital, Spuyten Duyvil, New York City, are open for competitive examination, April 29. Application should be made to Dr. Lewis F. Frissell, 113 East Fifty-sixth Street, New York City.

Contagious Diseases.—There were reported to the sanitary bureau for the week ending April 6, 415 cases of measles, with 21 deaths; 392 cases of scarlet fever, with 16 deaths; 386 cases of tuberculosis, with 211 deaths; 319 cases of diphtheria, with 38 deaths; 92 cases of typhoid fever, with 18 deaths; 74 cases of whooping cough, with 12 deaths; 18 cases of cerebrospinal meningitis, with 10 deaths; 73 cases of varicella and 4 of smallpox, making in all 1,773 cases, with 326 deaths.

Society Election.—At a meeting of the Brooklyn Medical Society the following officers were elected: President, Dr. Hugh E. Rogers; vice-president, Dr. William H. Rankin; recording secretary, Dr. Alfred E. Shipley; corresponding secretary, Dr. Edward W. Wright; treasurer, Dr. Edwin A. Hatch; librarian, Dr. Lewis E. Meeker, and trustees, Drs. Algernon T. Bristow, Alfred Bell, James W. Ingalls, William B. Brader, John H. Droge, James C. Kennedy, John D. Sullivan, Elias H. Bartley and Richard W. Westbrook.

Opposition to Free Eyeglasses.—A number of protests against supplying free eyeglasses to school children with defective vision were made at the last meeting of the Board of Education. The Association for Improving the Condition of the Poor believes that to supply eyeglasses would be both demoralizing and pauperizing, and would fail to remove the cause of defective vision. Similar protests were also entered by the City Club, the Brooklyn Bureau of Charities, the Children's Aid Society, the Brooklyn Children's Aid Society, and several other organizations.

Medical Instruction for East Side.—The American Life-Saving Society has just established a medical bureau under the direction of Dr. G. Fish Clark. The aim of the bureau will be to instruct parents in the crowded districts of the city how to protect themselves and their children from disease. Advice and instruction on first-aid to the injured, sanitation and hygiene will be given without charge to all who will come to the bureau in the afternoon between 5 and 6 o'clock. Five lectures on these subjects will also be given at the city baths by Dr. Clark and Superintendent Brennan.

The Typhoid Scare.—It has practically been determined that the typhoid outbreak at Katonah was due to contamination of the village water supply by Italians employed at Cross River Dam. No new cases have been reported, but it seems that there have been thirteen cases in all.——The increase in the number of typhoid cases in Manhattan has been so sharp since the middle of March that the county medical society has called the attention of its members to the fact. For the week ended March 30 there were 106 cases with 12 deaths in Manhattan, and for the first week in April there were 18 deaths as compared with 6 deaths from this disease for the corresponding week of last year. The boiling of all water used for drinking purposes has been advised.

The Milk Question.—The committee of public health of the Board of Aldermen, which has been holding public hearings on the milk question, decided at a special meeting, April 11, in favor of the ordinance which, if passed, will require that the milk from every dairy supplying New York shall be tested by the Health Department once a month, and that any milk showing over 500,000 bacteria to the cubic centimeter, will have to be pasteurized before being sold. There are many other points to the measure, but it is said that it will not be signed by the mayor until he has heard from the special commission which is investigating the matter. This commission has not yet reported, but it is said that it will suggest that state aid be invoked. The state is supposed to be ready to condemn diseased

cattle and to pay the owners a certain part of their value, but the appropriation has not been large enough to carry out this provision of the law. A bill is being prepared for presentation to the legislature sometime during the coming week requiring the reporting of illness among employés in dairies, and sickness among cows. If employés are found to be ill they must be segregated. If cows are ill they are to be killed and the owners will receive compensation for them. The bill also provides an appropriation for recompense to cover the latter part.

Centennial of the New York College of Physicians and Surgeons.—The College of Physicians and Surgeons of New York is just passing its one hundredth anniversary. The charter bears the date of March 12, 1807. The first class graduated in 1811, this year also being notable for the induction into office as president of Dr. Samuel Bard, who had been the physician of George Washington and a former dean of the medical faculty of Columbia College. Two years later, 1813, this school absorbed the entire medical faculty of Columbia College, thereby increasing the strength and prestige of the teaching body. General medical and surgical clinics to supplement bedside instruction were inaugurated through the efforts of Dr. Parker in 1841. Practical work in obstetrics began in 1853 while about the same time the chair in physiology and pathology was created and placed under the charge of Dr. Alonzo Clark, who had just completed a course of postgraduate study in pathology in Paris. In 1878 an event of special historic interest was the establishment of a student laboratory for instruction in pathology with Francis Delafield as its director. A nominal union between the College of Physicians and Surgeons and Columbia College was ratified in June, 1860, but it was not until November, 1891, that the actual union of the two institutions took place. The course of study was at least two years of five months each until 1878, when the time was extended to seven and one-half months. In 1887 the course was again extended to three years of eight and one-half months each until 1894, when four years of eight and one-half months each were required. This centennial anniversary will be celebrated at the coming commencement of Columbia University, June 10-12. A special number of the *Columbia University Quarterly* is largely devoted to the medical work containing leading articles by Profs. L. Emmett Holt, Frederick S. Lee, Walter B. James, Francis Carter Wood, M. Allen Starr and George S. Huntington. It is a valuable addition to the literature of historical medicine.

NORTH CAROLINA.

State Hospital Directors Meet.—At a recent meeting of the directors of the State Hospital for the Insane, Morganton, Dr. P. L. Murphy was reappointed superintendent, and Drs. John McCampbell and James K. Hall, assistant physicians.

Society Meeting.—At the annual meeting of the Haywood Medical Society the following officers were elected: President, Dr. Rufus L. Allen; secretary-treasurer, Dr. J. Howell Way, and delegate to the state association, Dr. J. Rufus McCracken, all of Waynesville.

OHIO.

Graduate School Opened.—The Graduate School of Cincinnati, whose teaching force is made up from the faculty of the Medical College of Ohio, with which it is connected, opens for its first session this spring.

Physicians Swindled.—It is reported from Akron, April 11, that about 30 physicians of that town have been swindled by two men who represented themselves to be agents for a collection agency and induced physicians to sign notes of $100 each, entitling them to membership in the agency.

Election.—The annual meeting of the Akron Medical Club was held April 4, when the following officers were elected: President, Dr. Le Roy C. Eberhard; vice-president, Dr. H. Irving Cozard; secretary, Dr. Edmund A. Weeks, and treasurer, Dr. James G. Grant. This club is organized along the line of promoting the social side of medical life.

Milk Commission for Toledo.—The president of the Academy of Medicine of Toledo and Lucas County has appointed Drs. William C. Chapman, Charles W. Moots and Homer H. Heath to serve with Dr. I. Howard McVay, representing the Toledo Homeopathic Society; the secretary of the Woman's Clubs and the secretary of the Chamber of Commerce, to secure a better milk supply for Toledo.

Personal.—Dr. O. M. Pinney, Madisonville, has been appointed by the Presbyterian Board of Foreign Missions as medical missionary to Benito, West Coast of Africa.——Dr. Adolphus W. Foertmeyer has been appointed receiving physician at the City Hospital, Cincinnati, vice Dr. A. E. Osmond, resigned.——Dr. John B. Woodworth, Delaware, secretary of the Delaware County Medical Society, has resigned and left for Texas.

PENNSYLVANIA.

State Hospital Burned.—On April 8 the State Hospital for the Insane, Norristown, was destroyed by fire. A majority of the patients have been transferred for temporary lodgment and care to the insane department of the Philadelphia Hospital.

Society Meeting.—The North Penn Clinical Society, composed of physicians practicing in towns along the North Penn Railroad, was organized at Quakertown, March 13. The following officers were elected: President, Dr. Josiah E. Bauman, Telford; vice-presidents, Drs. Oliver H. Fretz, Richland Center, and John J. Ott, Pleasant Valley; secretary, Dr. Walter H. Brown, Richlandtown; assistant secretary, Dr. Francis A. Borzell, Cressman, and treasurer, Dr. Alfred E. Fretz, Sellersville.

The Medical Board Bill.—The Bowman bill remains in the house judiciary general committee in the hope that a change of sentiment will take place in favor of the measure. The bill was introduced primarily to elevate the standard of Pennsylvania medical practitioners. There are 54 civil divisions in the United States, including Porto Rico, Hawaii and the Philippines, of which 39 have single medical boards while only 12 have three boards. In Pennsylvania there are at present three boards, regular, homeopathic and eclectic, each of which examines graduates of medical colleges belonging to its particular school. If an applicant fails to pass one board he can apply for an examination before another board and so receive a license. Representative Bowman's bill provides for a single examining board of 10 physicians selected from the regular, the homeopathic, the eclectic and the osteopathic schools, to be appointed by the governor, no school having a majority of the entire board. The objectors to the bill say that the examining boards should be composed of 12 members, three representatives from each of the four schools. The regular profession insists that this should be left to the discretion of the governor.

Philadelphia.

Cerebrospinal Meningitis.—The presence of a number of cases of cerebrospinal meningitis in different sections of the city during the last two weeks has caused alarm among health officials. Since April 6, 14 cases of the disease have been reported to the bureau of health and 4 deaths from the disease have been reported.

Hospital Applies for Aid.—The Hospital of the Woman's Medical College of Pennsylvania has issued an appeal for aid because it is doing a great work for the sick poor and yet is hampered by insufficient temporary quarters, having no private rooms as a source of income and no endowment fund. The hospital asks for money and annual subscriptions for the endowment fund or for the building fund.

Personal.—Dr. J. William White, professor of surgery at the University of Pennsylvania, has been elected advisory surgeon of the Pennsylvania Railroad Company. Dr. White will have supervision of the medical corps of the system.——Dr. William W. Keen has been elected an honorary member of the German Surgical Society. He is at present in Berlin, a delegate to the surgical congress being held there.

Hospital Cornerstone Laid.—On April 9 occurred the laying of the cornerstone of the new Frankford Hospital. Previous to the ceremony addresses were made by James S. McMasters, who presided; Representative Samuel Christian, Congressman W. W. Foulkrod and Dr. J. Baker Laird. Isaac Schlichter, chairman of the building commission, laid the cornerstone. The new building will be a two-story brick structure, with provision for the addition of two stories.

TENNESSEE.

Graduation.—The fifty-sixth annual commencement exercises of the University of Nashville, Medical Department, were held March 29, when a class of 52 was graduated. Chancellor James D. Porter of the university presided, and Dr. L. M. King delivered the faculty address.

Society Meeting.—At the annual meeting of the Nashville Academy of Medicine and the Davidson County Medical Society, held at Nashville April 2, Dr. George W. Crile, Cleveland, Ohio, delivered the address of the evening on "Direct Transfusion of Blood." The following officers were elected: President, Dr. Marvin M. Cullom; vice-president, Dr. Rufus E. Fort; secretary-treasurer, Dr. Holland M. Tigert, and delegates, Drs. William D. Haggard, John A. Gaines and Sidney S. Crockett, all of Nashville.

TEXAS.

Fire Losses.—On March 16 the office of Dr. Robert S. Foster, Northrup, was destroyed by fire with a loss of more than $1,000.——The Denton County pest house, five miles south of Denton, was burned April 1, with a loss of about $300.

WISCONSIN.

Smallpox.—It is reported that there are 40 cases of smallpox at Manawa; a number of cases have also developed at Royalton.

Personal.—Dr. and Mrs. Victor F. Marshall, Appleton, sailed for Europe on the *Minnetonka* from New York, April 6.——Drs. Frank P. Donahue and Oscar Lutz, internes at the Emergency Hospital, Milwaukee, have resigned.——Dr. Joseph Lewis, Milwaukee, who has been ill at the Hanover Hospital for three months, has recovered.

Tuberculosis Sanatoria.—Dr. Chester A. Paull, superintendent of the new State Sanatorium for Tuberculosis, Wales, reports that the sanatorium will be opened about June 1, when from 80 to 100 patients can be accommodated.——The Milwaukee Sanatorium for Tuberculosis Association has taken possession of its property on the Blue Mountain Road. Plans for two pavilions have been completed and the administration building is now ready for use.

Hospital Notes.—Drs. William M. Gratiot and H. D. Ludden have opened a hospital at Mineral Point.——A meeting was held at Portage, April 6, to discuss the matter of a hospital for that city and to form an organization. Dr. William J. Thomson was elected permanent secretary, and the ways and means of defraying the cost of a hospital were discussed. The consensus of opinion was that a hospital to meet the needs of Portage should cost from $15,000 to $20,000.

GENERAL.

Tuberculosis Sanatorium in Porto Rico.—The tuberculosis sanatorium founded at San Juan by the Anti-Tuberculosis League of Porto Rico was dedicated April 5 by Governor Winthrop.

New Medical Society.—The Mexican physicians in Monterey, Mexico, on April 4, effected a permanent medical organization to be known as the Nueva Leon Medical Society. A constitution and by-laws were adopted.

Havana Physicians Protest.—The physicians of Havana held a meeting recently and entered a protest against the activity of Governor Magoon in licensing two American physicians to practice medicine in Havana who had not first passed an examination in the University of Havana, as required by law.

National Boards of Health Conference.—The fifth annual conference of State and Territorial Boards of Health with the Public Health and Marine Hospital Service will be held in Washington, D. C., May 31, 1907. These conferences are convened in accordance with the act of Congress approved July 1, 1902, "increasing the efficiency of the Marine-Hospital Service." The subjects to come before this conference for discussion will be: "Sanitary Supervision of Milk Supplies," "Malaria, its Geographical Distribution," and "Bacillus Carriers." The last-named important subject is attracting much attention at present.

American Pediatric Society.—This society will hold its nineteenth annual meeting at Washington, D. C., March 7-9, 1907. The headquarters and meeting place will be the Arlington Hotel. Among the subjects on which papers will be read are: "The Calorie Value of Modified Milk," Dr. Maynard Ladd, Boston; "Cane Sugar Feeding in Its Relation to Some of the Disorders of Childhood," Dr. Charles G. Kerley, New York; "Kernig's Sign in Infancy; a Study of Two Thousand Cases," Dr. John Lovett Morse, Boston; "Bacteriology in Meningitis," Dr. F. S. Churchill, Chicago; "Grip Meningitis," Dr. Samuel S. Adams, Washington; "The Rest Treatment in Chorea," Dr John Ruhräh, Baltimore; "Etiology of Infantile Atrophy," Dr. A. H. Wentworth, Boston. Further information may be had from the secretary, Dr. Samuel S. Adams, 1 Dupont Circle, Washington, D. C.

Association of American Medical Colleges.—The annual meeting of this association will be held in Washington, May 6. The president's address will be given by Dr. George M. Kober, Washington. The topics taken up will be: "Giving Credit for Work Done in Literary Colleges; the Combined Course," by Dr. Egbert LeFevre, New York; "The Advancement of Medical Education," by Dr. Murray Galt Motter, Washington; "Should Examinations for Licensure be in Two Parts, and How Shall They be Conducted?" by Dr. William J. Means, Columbus, Ohio; "Teaching Internal Medicine," by Dr. William S. Thayer, Baltimore; "Teaching Materia Medica, Pharmacology and Therapeutics," by Dr. Torald Sollmann, Cleveland, Ohio; "Teaching Anatomy," by Dr. Frank S. Baker, Washington, and "When Shall Students Begin to Attend Clinics?" by Dr. Frank E. Bunts, Cleveland, Ohio.

American Academy of Medicine.—The thirty-second annual meeting will be held at Atlantic City, N. J., June 1 and 3, 1907. The secretary is Dr. Charles McIntire, Easton, Pa. Some of the papers on the program are to be on the following subjects:

President's Address: A Medical Career and the Intellectual Life, Dr. Casey A. Wood, Chicago.
The Communal Life of Physicians, Dr. Leartus Connor, Detroit.
The Housing Problem, Drs. S. A. Knopf and Gertrude C. Light, New York City.
The Effect of Child-Labor on Physical Development, Dr. Alfred Friedlander, Cincinnati.
The Superiority of the Playground to the School-room, Dr. Woods Hutchinson, Arrowhead, Cal.
The Soldier as a Total Abstainer, Dr. J. W. Grosvenor, Buffalo.
Insurance for Defectives, Dr. James A. Spalding, Portland, Me.
State Examining Boards, Dr. Henry Beates, Jr., Philadelphia.
Relations of the Medical and Legal Professions to the Public, Dr. T. H. Shastid, Marion, Ill.
Legislation to Promote Preventive Medicine, Dr. Benjamin Lee, Harrisburg.
A National Department of Health, Dr. J. Pease Norton, New Haven.
Criminal Abortion, Dr. Henry W. Cattell, Philadelphia.

Obliterating a Yellow Fever Focus in Cuba.—Dispatches published in the reports of the U. S. Public Health Service give an account of the prompt and energetic measures adopted to suppress a focus of yellow fever that has been discovered in Havana Province, Cuba. The reports show that the disease in the single case reported was contracted at a plantation in the vicinity of Nueva Paz, a town of 2,000 inhabitants situated about 45 miles southeast from Havana. The patient, a Spaniard, who has been removed to Las Animas Hospital, Havana, arrived in Cuba last December, and after ten days' stay at Havana, went to Nueva Paz, where he remained continuously until taken sick. Dr. Stansfield of the Public Health and Marine-Hospital Service reports that a disinfecting and oiling brigade of forty men, under experienced supervision, has been sent to Nueva Paz to exterminate mosquitoes, and that the work of sanitation will be extended to all places in the vicinity. Major Kean, adviser to the Cuban Sanitary Department, stated, April 2, that Havana is free from yellow fever; and inasumch as the present case was imported, there is no reason to fear infection in that city. The only other case of yellow fever, a fatal one, reported in Cuba during the present year, occurred in January at Santa Clara, capital of the province of the same name.

CANADA.

New Western University.—Alberta is to have a provincial university at Strathcona.

Cremation.—Cremation is growing in Montreal, where is located the only crematory in Canada. There were 33 cremations from the commencement of operations in 1904 until April 2, 1906, and 13 from that date until Feb. 28, 1907. Prior to the establishment of the McDonald crematory there had been 12 by the Mount Royal Cemetery.

Hospital News.—The late Mrs. Peter Redpath of Montreal left the Montreal General Hospital $40,000.——A new quarantine hospital will soon be ready for occupation in Winnipeg, Man.——A psychiatric clinic is to be established in connection with the proposed new general hospital for Toronto. It is intended that it shall occupy a separate building, have accommodation for 100 patients and treat acute cases of mental disease.

Checking Consumption in British Columbia.—The annual meeting of the Anti-Tuberculosis Society of British Columbia was held in Victoria, April 2. Dr. Fagan, the municipal health officer of British Columbia, who has the matter of the erection of a sanatorium in charge, announced that there are nearly sufficient funds in sight to proceed with building operations. He has collected $10,000 in Vancouver, where the medical profession alone subscribed $2,800. About $10,000 is still needed before the necessary $50,000 is secured.

Personal.—The Manitoba Board of Health has been appointed as follows: Dr. R. M. Simpson, Winnipeg, chairman; Drs. John M. Eaton, John A. Macdonald, E. L. Schaffner and Gordon Bell.——It is announced that the government will appoint Dr. Thompson, M. P., of Dawson, commissioner of the Yukon at a salary of $5,000, with $6,000 for living expenses. ——Dr. Andrew Eadie of Toronto was assaulted by the father of a former patient who died of appendicitis; the butt end of a heavy teamster's whip was the instrument used. Dr. Eadie has lain unconscious at his home ever since the assault,

April 8.——Major Leonard Vaux, M.D., P.A.M.C., Toronto, will be Canada's representative with the imperial army at Aldershot and later on at the Royal Army Medical College at London. He will take up a course for the next year in bacteriology and hygiene.——Dr. Halfpenny, Winnipeg, is doing graduate work at Johns Hopkins University.

FOREIGN.

A Hospital on the Mount of Olives.—The foundation stone of the new German hospital on the Mount of Olives was laid March 31, 1907. The Sultan of Turkey gave the land.

A New Medical Mission in India.—A new medical mission has been started in Parbhani, in the Nizan country, by the United Free Church of Scotland. The Murray Mitchell Hospital and dispensary buildings are to be erected at this place.

Appropriations for Scientific Purposes in Germany.—Among the appropriations recently voted by the German parliament is $50,000 for repression of typhoid fever and $30,000 for tuberculosis; $16,000 for study of sleeping sickness; $17,500 for the approaching International Congress for Hygiene at Berlin, September 23-29; $25,000 for research on syphilis; $6,500 for investigation of the statistics of accidents and $10,000 for combating infant mortality.

The "Preventive" Theater.—In order to continue the antivenereal campaign, Le Vallier and Nigel of Paris have organized evening entertainments at a small theater, rue Saint-Denis 133. "The Initiation" is the name given to the entertainment. First there is a two-act play called "The Immolated," the plot turning on a case of syphilitic sterility. The second part is a lantern talk on syphilis, with numerous views. The organizers of the show do not seem to be physicians, but they admit physicians free on presentation of their visiting cards.

Pharmacy in Turkey.—The United States Consular and Trade Reports state that there are 400 pharmacists in Constantinople and quotes a local pharmacist as follows: "Physicians, with the fear of having their prescriptions transformed by doubtful dispensers, are wont to order medical specialties which offer guaranties of careful preparation." Although this may be an exaggerated view, there is, nevertheless, the Reports state, a growing demand for medical specialties. As late as ten years ago advertising had little or no effect on the sale of such specialties, but this is no longer the case, and the importance of keeping before the public in an intelligent manner by means of advertising in the principal local journals, by posters in the streets, stations and public places, is increasing and becoming recognized by those interested.

Training School for Disinfectors.—In Prussia during 1905 about 64 official nine-day courses of lectures on practical disinfection were given at 17 different points; 533 persons attended the lectures, and 533 passed the examinations and received certificates as officially tested disinfectors. Besides the above courses a number of three-day courses were held for nurses, and about 200 nurses were thus trained for the disinfecting service, especially for continuous bedside disinfection, while the licensed disinfectors were trained especially for the terminal disinfection. Every three years the licensees must submit to further tests, and take another course of lectures at the end of six years. Steam disinfection apparatus are preferred to formalin apparatus as a rule. The *Münch. med. Wochschr.* mentions further that applicants must be under 45.

Quinin Tannate Candy for Children.—The Academy of Medicine, Rome, Italy, recently passed a resolution asking the government to have quinin tannate, in the form of chocolate drops, distributed for the use of children in malarial regions. Zeri, Concetti and others related very favorable experiences with it. Contrary to other preparations of quinin, the tannate is borne well even when there is considerable vomiting, and diarrhea is favorably influenced. It is evidently tolerated better by the intestinal canal as it is less bitter and less toxic. A child affected with hemoglobinuria every time quinin was given under any other form, tolerated the tannate chocolate drops and was thus soon cured of malaria. Viale proclaimed its advantages as long ago as in 1852. The vote was, therefore, taken asking that the tannate in this form be sold at cost price or distributed free to children like the other preparations of quinin for adults.

Plague in India.—Consul-General Michael, at Calcutta, reports that the plague mortality is increasing in the Punjab at the rate of 1,000 deaths a week. He also quotes the report of the health officer of Calcutta that experiments at inoculation in India have been somewhat discouraging. In Calcutta an offer of 16 cents each to all who had themselves inoculated had so little effect that only 101 inoculations were made during the year. Attempts to exterminate the rats were equally disappointing, although 4 cents each were offered for live rats. Altogether about 100,000 rats were accounted for, but this does not seem to have made much impression on the rat population. All species of rats seem to be liable to the disease, so that attempts at destruction must include all kinds. The extermination of the rodents and the consequent abolition of plague is likely to be a difficult task which will take a generation or two, but it should not be deemed hopeless.

Improved Records of Criminal Statistics in France.—According to new regulations, the statistics of crimes in France will in future strive to take account of the physical conditions, the individual conditions and the social conditions which are at the basis of a given crime, so far as they can be determined. The physical conditions include climate, nature, soil, season; the individual, age, sex, origin, profession, etc., and the social, density of the population, poverty, wealth, etc. Further than this, each record is obliged to mention whether the offense had been committed under the influence of liquor, and whether the criminal is a habitual or occasional drinker. The statistics for 1905 show that 2,294 criminals were declared to be irresponsible. In issuing his orders the minister of justice urged research into the past of the criminal, his heredity, his education, environment, the causes of his fall and means of redemption. If by this means, he said, the magistrate, in concert with the medicolegal experts, can work back from the crime to its pathologic origin, justice will be enlightened and the cause of science promoted. An editorial in the *Semaine Méd.*, from which we quote the above, states that the statistics collected henceforth in France will be more complete and hence more valuable than those of any other country.

Resignation of Danish Board of Health.—Meyer writes from Copenhagen to the *Münch. med. Wochschr.* stating that on March 5 the Royal Board of Health (kgl. Gesundheitsamt) sent in its resignation as a body, signed by all the members of the board. This body was organized in 1803, and has charge of all sanitary and public health matters, and its members serve without pay. During the last five years it has been entirely ignored by the minister of justice, who has drawn up bills, made appointments, etc., without consulting the public health office in any way. The bill for repression of venereal disease, recently described in these columns, page 1119, was drawn up and passed without consultation with it, as also the bills in regard to repression of tuberculosis and other health matters. The board presented a detailed list of grievances to the king in an official communication three months ago, to which the minister replied, on the floor of parliament, in sarcastic terms. Nothing remained for the members of the board but to resign, which they have accordingly done. As no other physician will accept a position on the board as matters now stand, the country is without an official health bureau. The lack of expert medical supervision is evident, Meyer says, in the antivenereal law mentioned above, especially its sanitary features. The medical profession fears that some of the provisions of the law will shake the confidence of the patient in his physician, whom he will look on more as a police officer than as a confidant and friend.

Half a Million Vaccinated in Paris in Fifteen Days.—France always has a number of cases of smallpox each year at different points; in 1904 there were 1,000 cases in 15 departments, but the populace has never taken this condition of affairs seriously, and the measures requiring vaccination have never been strictly enforced. A few cases of smallpox occurred recently at Dunquerque, and three out of the four nurses who came in contact with the first patient died. The small epidemic was promptly arrested, but the Paris press wrote it up and a remarkable smallpox scare resulted. The people crowded by thousands to be vaccinated; Chantemesse estimates that nearly 500,000 were vaccinated during the first two weeks. The *Académie de Médecine* in commenting on this curious page of history in this year of our Lord, 1907, called attention to the drawbacks of such hasty, wholesale vaccinations. The law in Prussia forbids more than 130 vaccinations at one sitting, and in Baden no more than 150 can be vaccinated in one day. The necessity for legislation in France compelling vaccination of the floating population, sailors, day laborers temporarily employed and the like, was earnestly pleaded by Kelsch. The power of the press, he added, has been illustrated once more by this "delirium for vaccination" which it induced by writing up the half-dozen cases at Dunquerque, while the populace has never been roused from its inertia before by the thousand odd cases occurring on all sides every

year. Men, women and children fought for the vaccine which the week before they had regarded with sublime indifference, as will probably be the case also a month from now. Kelsch commented further on the aid which the press might render to sustain the efforts of physicians in keeping alive this fear of smallpox which is the beginning of wisdom.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, April 6, 1907.

The Use of Alcoholic Beverages.

A controversy on this subject has been started in the medical and in the lay press by certain eminent members of the profession. Apparently, they are dissatisfied with the pronouncements, which have recently been made by men equally eminent, deprecating almost entirely the use of alcohol and the marked tendency to its disuse which has been much in evidence of late. Sir Victor Horsley, who is the most prominent teetotal advocate of the profession, recently stated at the Toronto meeting of the British Medical Association that alcohol is being rapidly superseded by milk in London hospitals. The following manifesto has been issued and signed by some of the most prominent physicians and surgeons: "In view of the statements frequently made as to the present medical opinion regarding alcohol, we think it desirable to issue the following statement, which we believe represents the opinions of the leading clinical teachers as well as the great majority of medical practitioners. Recognizing that in prescribing alcohol, the requirements of the individual must be the governing rule, we are convinced that in disease alcohol is a rapid and trustworthy restorative. In many cases it may be described as life preserving, owing to its power of sustaining cardiac and nervous energy, while protecting the wasting nitrogenous tissues. As an article of diet, we hold that the universal belief of civilized mankind that the moderate use of alcoholic beverages is, for adults, usually beneficial, is amply justified. We deplore the evils arising from the abuse of alcohol. But there is nothing, however beneficial, which does not by excess become injurious." It need not be said that such a manifesto has not been allowed to pass unchallenged by the opponents of alcohol, who include names in the profession equally eminent. A counterblast has been started in the *Lancet* by Sir James Barr and others. Sir James Barr states that he is anxious to get reliable information as to the power of alcohol to sustain cardiac and nervous energy. He prescribes it simply as a sedative and antispasmodic to paralyze the vasomotor system, much in the same way as he does nitroglycerin. We are only at the beginning of what threatens to be a very hot controversy. It is a curious comment on our boasted progress that the leaders of the profession should be so diametrically opposed regarding the use of a remedy as old as civilization, the experience of the use of which is incalculably great and concerning which an enormous number of experiments on man and animals have been made. It is unfortunate that the controversy should have extended to the lay press, but this was rendered inevitable by the publication of the manifesto there. Once more the differences of the profession will become a subject of jibe for the public. Worse still, unfounded imputations have begun to be cast on the signers of the manifesto, such as: How many of the signers hold brewery or distillery shares? and, How many cases of Scotch whisky does the manifesto represent?

VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, April 3, 1907.

Damages Recovered for Sepsis Resulting from Having Corns Cut in a Public Bath.

A remarkable case was decided recently by the court of appeals. A merchant in the prime of life asked for damages on the ground that he had been infected when having his corns cut in a bath by the men paid by the proprietors of the bathing establishment to perform this small operation on the visitors. It appeared that the possibility of having the corns cut by a "specialist" attracted many persons to that special bath and that the merchant in question, who was operated on in the bath, soon afterward complained of pain in his leg, which became swollen and painful. Although medical aid was called in, sepsis was inevitable, and the leg had to be amputated below the knee. The court decided that the proprietors were responsible for their employés, and that the fact of medical aid having been sought at once proved clearly that there had been no negligence on the part of the sufferer. Therefore, the claim of the plaintiff was justified, and he was awarded damages to the amount of $2,000. The proprietors were at the same time severely reprimanded for not carrying out the city ordinance in regard to bathing establishments, which requires the presence of a medical man during certain hours of the day on the premises for the purpose of controlling all instruments and apparatus used for massage, inhalations, etc.

Women Eligible to the Posts of Senior and Junior Hospital Officers.

By the appointment of a woman to the post of "Secundärarzt" in a children's hospital, a new and important step has been taken by our very conservative hospital administration, which hitherto has constantly ignored the presence of fully qualified medical women and the useful work done by them in their inofficial positions as "Aspirant" or "Hospitant," both expressions meaning nothing more than "a tolerated guest." The prejudice was so strong in many quarters that even Professor Albert, the famous surgeon, did not allow female students to work at his clinic. Several petitions have been forwarded to the ministry of the interior at different times, but the rules of the Vienna University give so much independence to both the professors and the students that the minister felt unable to interfere. The increased recognition accorded to the work done by women physicians has prompted first one and then another of the holders of the university chairs to appoint a medical woman as their assistant, and at last the medical women have been found to do just as valuable work as the men. The government now makes no further distinction between the male and female sex when it is a question of merit.

Investigations into the Hygienic Conditions of School Children.

The institution of medical inspectors of schools, only a recent addition to the administration of our schools, has already rendered good service in investigating the reasons of the insufficient physical fitness of many children, especially in large towns. One of the foremost causes has been found to be insufficient sleep; more than 20 per cent. of all the children go to bed after 10 p. m., and the difference between the actual length of sleep and the time spent in bed ran up to one hour and forty minutes, or 20 per cent. of the time. This is explained partly by the bad habit of keeping the children awake, or by unhygienic surroundings. Only from 30 to 40 per cent. of the children sleep alone; the remainder have to share the bed with one or two or even with more persons. Bathing is a luxury which only 10 per cent. of the children can have at home. The school baths are doing very good work in this respect, and bathing facilities are now installed in nearly every school. In only very few class rooms can all the windows be opened; in most school rooms the windows have to be closed because of the street noise. The bad effects of short sleep, bad air and also of inadequate nourishment combine to make the children anemic and less vigorous. The remedies recommended by the medical inspectors are: Better ventilation, by opening the windows every hour for at least ten minutes; opening school at 9 instead of 8 a. m., and distribution of free meals to those children who need it.

Association News

OFFICIAL CALL.

THE FIFTY-EIGHTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, TO BE HELD AT ATLANTIC CITY, N. J., JUNE 4-7, 1907.

To the Officers and Members of the Constituent State and Territorial Associations of the American Medical Association:

The fifty-eighth annual session of the American Medical Association will be held at Atlantic City, N. J., on Tuesday, Wednesday, Thursday and Friday, June 4, 5, 6 and 7, 1907.

THE HOUSE OF DELEGATES.

The House of Delegates of the American Medical Association will convene at Atlantic City, N. J., at 10 a. m., on Monday, June 3, 1907. The representation in the House of Delegates of the various constituent associations for the years of 1907, 1908 and 1909 will be as follows:

Alabama	3	Montana	1
Arizona	1	Nebraska	2
Arkansas	2	New Hampshire	1
California	3	New Jersey	3
Colorado	2	New Mexico	1
Connecticut	2	New York	11
Delaware	1	Nevada	1
Dist. of Columbia	1	North Carolina	3
Florida	1	North Dakota	1

Georgia	2	Oklahoma	2
Hawaii	1	Oregon	1
Idaho	1	Pennsylvania	8
Illinois	7	Rhode Island	1
Indiana	4	South Carolina	2
Iowa	3	South Dakota	1
Kansas	3	Tennessee	2
Kentucky	3	Texas	5
Louisiana	2	Utah	1
Maine	1	Vermont	1
Maryland	2	Virginia	3
Massachusetts	6	Washington	1
Michigan	4	West Virginia	1
Minnesota	2	Wisconsin	3
Mississippi	2	Wyoming	1
Missouri	4	Philippine Islands	1
Ohio	6		

The twelve sections of the American Medical Association, the Medical Department of the Army, the Medical Corps of the Navy and the Public Health and Marine-Hospital Service are entitled to one delegate each.

FIRST GENERAL OR OPEN MEETING.

The first General Meeting, which constitutes the opening exercises of the scientific functions of the Association, will be held at 10:30 a. m., Tuesday, June 4.

REGISTRATION DEPARTMENT.

The Registration Department will be open from 8:30 a. m. until 5 p. m., on Monday, Tuesday, Wednesday and Thursday, June 3, 4, 5 and 6, and from 9 to 10 a. m. on Friday, June 7.

WILLIAM J. MAYO, President.

GEORGE H. SIMMONS, General Secretary.

THE ATLANTIC CITY NUMBER.

The Annual Professional Writeup with Programs and Full Details of the Session.

The May 4 issue of THE JOURNAL will be the annual special number, giving the preliminary programs of the sections, lists of headquarters, hotels, meeting-places, railroad rates, excursions and other data of interest to those who will attend the fifty-eighth annual session of the American Medical Association in Atlantic City, N. J., June 4 to 7, 1907. Between 52,000 and 55,000 copies of this special edition will be distributed. Any one who has data concerning special parties, plans for stopovers, excursions and other matter of interest to the members should send in this information at once.

To answer questions that are being asked about headquarters for the various sections, we repeat from THE JOURNAL, February 23, the following list:

HEADQUARTERS.

GENERAL HEADQUARTERS, MARLBOROUGH-BLENHEIM.
PRACTICE OF MEDICINE: Hotel Dennis.
SURGERY AND ANATOMY: Hotel Chalfonte.
OBSTETRICS AND DISEASES OF WOMEN: Haddon Hall.
DISEASES OF CHILDREN: Hotel Traymore.
NERVOUS AND MENTAL DISEASE: Hotel Brighton.
OPHTHALMOLOGY: Hotel Seaside.
LARYNGOLOGY AND OTOLOGY: Hotel Strand.
PATHOLOGY AND PHYSIOLOGY: Hotel Shelburne.
HYGIENE AND SANITARY SCIENCE: Hotel St. Charles.
PHARMACOLOGY AND THERAPEUTICS: Hotel Marlborough.
CUTANEOUS MEDICINE AND SURGERY: Hotel Marlborough.
STOMATOLOGY: Hotel Traymore.

General headquarters for registration, information, commercial exhibits and the Scientific Exhibit will be on Young's Pier.

Atlantic City is preparing to give those who attend the coming session in June even better accommodation than heretofore, there being more hotels and larger ones than when the Association last met in Atlantic City. Special attention is being given to locating the section headquarters in hotels directly on the beach front and contiguous to the Boardwalk. The section meeting places are being grouped as closely together as rooms providing commodious accommodation can be obtained. It will be the endeavor of the Trustees' committee, ably assisted by the auxiliary committee, to provide for the members of the Association the greatest amount of comfort possible, within a short radius, and at a minimum expense.

The secretary of the Committee on Hotels is Dr. W. E. Jonah, 1616 Pacific Avenue.

Correspondence

Certain Medical Aspects of Jury Trials.

PROVIDENCE, R. I., April 15, 1907.

To the Editor:—Whenever any distinct fault with a public institution becomes evident to the medical profession, it becomes the duty of this profession to manifest its views to the proper authorities and to call for a remedy. The methods of certain commonwealths in the disposition of their convicts, the relations of convict and ordinary labor, the hygiene of prison life—all have been passed in review of late and discussed by professional and lay writers, but as yet the conduct of jury trials has not been regulated or to any extent criticised.

Now it must be evident to any fair-minded person that 20, 30 and even 40 hours of constant discussion and deliberation is too much for any person; that no person after the lapse of such a period of thought is capable of sound judgment, and that any issue decided by jurors who have passed their usual periods of repose and sleep is decided by men with warped judgment, tired minds and muddy intellects. Let any physician ask himself what his judgment would be worth after 20 hours of deliberation on any one subject. Let him at such a time try to recall even fundamental questions on professional subjects. Would his views on any subject be worth hearing, or would he dare offer any opinion on which human life or liberty were at stake? Let the profession tell if the jury in any hard-fought criminal case is capable of sound judgment in such distinctly unhygienic surroundings as invariably obtain. I wish to protest with all my power against such conditions and to suggest a remedy; and I predict that thinking people will in time see the *rationale* of this philosophy. It is not necessary to quote from neurologists as to the ability of the human mind to stand mental strain. This is only too evident to any intelligent person. Why, then, should not juries, on whose judgment hangs the question of life or death, of success or ruin and of financial loss or gain, conduct their deliberations in a sensible manner, with suitable provisions for rest, with regular meals and with stated periods of sleep. They will do their work better and in a shorter time, and we shall read no more accounts of haggard men, with voices cracked and high pitched from exhaustion, wrangling and striving to arrive at a conclusion which might have been reached long before, were the jurors in better physical condition. The remedy: A day of 12 hours, or, at most, 14. One-half hour recess after each three hours of work, with provision for a change of air in the work room and for a short walk in fresh air. A bedroom with cots for sleeping, with regular hours allotted, and bathrooms for those who would use them. Let the public understand that under such conditions its welfare would be better served; let the prisoner know that under present conditions his sentence may be unjust and that under proper conditions justice is more sure, and let a jury take four days of 12 hours each to decide a murder case rather than one of 40 hours. The medical profession should discuss this important matter and, if it sees fit, urge on legislators and on the people a change as important as it is radical. Then no innocent man will suffer through the personal fatigue of an overtired jury, and jury trials will be purged of at least one of their undesirable attributes.

W. LOUIS CHAPMAN, M.D.

Disclaimer for "American Medical Syndicate."

PHILADELPHIA, April 13, 1907.

To the Editor:—I am informed that one or more persons in Washington, D. C., are endeavoring to interest physicians in the "American Medical Syndicate," whatever that may be, and are stating that I am largely interested in it. To the best of my recollection I never heard of the syndicate before, or of any one connected with it. H. A. HARE.

Pharmacology

CAMPHO-PHENIQUE.

Report of the Council on Pharmacy and Chemistry.

The following report was submitted to the Council on Pharmacy and Chemistry by the subcommittee to which Campho-Phenique had been assigned:

To the Council on Pharmacy and Chemistry:—Campho-Phenique, sold by the Campho-Phenique Co., St. Louis, Mo., is claimed to be composed of phenol 49 per cent., and camphor 51 per cent.

Examination of specimens, purchased in the open market, made under our direction, demonstrate that the statements made in regard to the composition are not true. Instead of containing 49 per cent. of phenol (carbolic acid), the analysis showed that it contains not more than 20 per cent. Instead of containing 51 per cent. of camphor, the analysis demonstrates that the amount of camphor is not more than 38 per cent. Besides phenol and camphor, a third substance was found which proved to be liquid petrolatum and to be present to the extent of 38 per cent. or more.

Since the statements made in regard to the composition of Campho-Phenique are deliberate misrepresentations of the facts, it is recommended that the article be not approved.

Besides Campho-Phenique, the above-mentioned firm also sells a preparation labeled Campho-Phenique Powder. While no statement in regard to the composition of this product is made on the label or in the literature, such expressions as "Campho-Phenique in a powdered form" and "Powdered Campho-Phenique" lead to the inference that it has essentially the same composition as that stated for the liquid preparation. An examination of a specimen of Campho-Phenique Powder purchased in the open market showed that 92 per cent. of it was a talcum-like inorganic substance. The remaining 8 per cent. consisted chiefly of camphor with a small amount of phenol.

In view of the fact that Campho-Phenique Powder contains very little phenol, but instead consists chiefly of an inorganic talcum-like substance, its name is misleading and deceptive. It having been shown that Campho-Phenique Powder corresponds to a camphorated talcum powder, the claims that it "has no equal as a dry dressing," that it is "absolutely superior to iodoform," and that it has "all the excellent properties of aristol and iodoform," are unwarranted. It is recommended that the article be not approved, and that this report be published.

The recommendations of the subcommittee were adopted by the Council, and in accordnace therewith the above report is published. W. A. PUCKNER, Secretary.

The above report on a much advertised "ethical" proprietary medicine is worthy of the thoughtful consideration of the members of the medical profession, as it illustrates admirably some of the conditions connected with this proprietary medicine business.

THE FORMULA A FAKE.

First, it illustrates the fact that the published formulas of the "ethical" proprietaries are not always reliable. The Campho-Phenique Company has been very willing to give out a formula, purporting their product to be 51 per cent. camphor and 49 per cent. phenol (carbolic acid). Now, these two drugs will make a liquid mixture, and any druggist can make it, and the mixture will have about the same consistency and appearance as Campho-Phenique. But its effect differs decidedly from that of Campho-Phenique. Some months ago a very intelligent physician, in discussing the proprietary medicine business, said that in some cases physicians could not get druggists to make preparations which were as satisfactory as those which could be bought ready made. He cited Campho-Phenique as an illustration. He said that he had used this preparation for burns, etc., but as he did not like to use preparations put up by companies about which he knew nothing, he asked his druggist to make the mixture in accordance with the published formula. The druggist's preparation was not satisfactory; it had a decidedly different effect from Campho-Phenique, and so he tried another druggist. This druggist also followed the published formula, but his results, too, differed materially from the proprietary article.

The various analyses that have been made show why the preparation put up by the druggist did not resemble that made by the company; since, according to the analyses, Campho-Phenique consists of 40 per cent. liquid petrolatum, which is an inert but soothing diluent, while instead of 49 percent. of carbolic acid, as claimed, it really contains less than 20 per cent. This is an entirely different proposition. Now, if the physician referred to above will have his druggist make a mixture of 20 per cent. of carbolic acid, 40 per cent. of camphor and 40 per cent. of liquid petrolatum, and will then compare this resulting compound with Campho-Phenique, he will find that there is not much difference. Furthermore, he will realize that there is nothing either new or wonderful about the preparation. Camphorated oil and carbolized oil are both in common use. Campho-Phenique is apparently simply a mixture of the two.

THE POWDER STILL WORSE.

So much for the liquid. The powder seems to be something entirely different, for according to the chemist's report, over 90 per cent. of it is an inert, absorbent, talcum-like material. There is enough camphor and carbolic acid to give the powder an odor and thus mislead physicians, especially those who are in the habit of taking for granted that whatever statements nostrum manufacturers make are true. Perhaps it is a fairly good dressing for wounds—at least it will do no harm—but its name is misleading and deceptive. For all practical purposes it is essentially a camphorated talcum powder.

THE CAMPHO-PHENIQUE COMPANY A "PATENT-MEDICINE" CONCERN.

The second interesting phase of this "ethical" proprietary is that it illustrates another point, i. e., that many of these articles are supplied to our profession by those who are not legitimate manufacturing pharmacists. The Campho-Phenique Company of St. Louis, according to all reports, is owned and controlled by a gentleman named Ballard. This "company" supplies the medical profession with the preparations under consideration and also with chloro-phenique and scrofonol. We are informed that this same Mr. Ballard is the principal owner, if not the sole owner, of quite a number of "patent-medicine" companies, such as Ballard-Snow Liniment Co., Brown's Iron Bitters Co, Mayfield Medicine Mfg. Co., Smith Bile Beans Co., Swain's Laboratory, and several others. We learn from the wholesale drug trade lists that these various "companies" make and sell, beside the campho-phenique preparations, Ballard-Snow Liniment, Ballard's Herbine, Brown's Iron Bitter's, Dr. Herrick's Pills, Richardson's Life-Preserving Bitters, Smith's Bile Beans, Swain's All Healing Ointment, and several other "patent medicines."

It is hardly necessary to make any further comments. The whole business is nauseating to those who know the actual conditions of this nostrum business and how our profession is being deluded. The Campho-Phenique matter is not an exception; it is simply another illustration of these conditions.

The majority of "ethical" proprietaries are foisted on our profession, either without any formula accompanying them, or with a "formula" that is a fake. The majority of the "ethical" proprietaries are manufactured and supplied to physicians, with instructions regarding their use, by men who bear the same relation to legitimate pharmacy that the veriest quack that ever swindled a credulous public bears to scientific medicine.

The Council on Pharmacy and Chemistry Encourages Reform.

In explanation to manufacturers whose products have been refused recognition, the Council directs publication of the following statement. W. A. PUCKNER, Secretary.

Some manufacturers, whose products have been rejected by the Council, have taken issue with this action on the ground that they were not given sufficient opportunity to comply with the requirements. This can only arise from ignorance of the methods of the Council in these cases, and seems to call for an explanation. In the first place, the Council does not like to reject any article, but prefers to see every product brought up

to its rules, and appreciates every attempt which manufacturers make in this direction. The rules have been public for over two years, which would seem ample time for compliance if the proper efforts had been made; but the Council stands ready to accept reforms even at this late date, and, indeed, at any time in the future.

When the Council determines to take up an article, this is generally assigned to a subcommittee, which prepares a report from the available evidence. This examination and report bear only on the article as it is marketed *at the present time*, and *not* on what it has been in the past or what it may become in the future; except that an unsavory past will naturally enjoin great caution in judging the present status of an article.

The report generally carries a recommendation whether the article shall be accepted or rejected, or final action delayed. A temporary suspension of judgment is recommended if the committee believes that the manufacturer is willing to reform objectionable features. If intentional fraud is discovered, the Council proceeds as it sees fit. If the objections are such as could be removed by proper reforms, the manufacturer is first informed of the decision of the Council, and the reasons therefor are given, generally in the language of the original report. This gives him an opportunity to file a reply or to take exception. If no reply is received, or if the reply contains nothing which could affect the decision of the Council, in the opinion of the committee, the article is considered definitely rejected, in its present form. The Council, however, is always ready to reconsider its decision, and to examine the article again, as soon as evidence is submitted that an honest effort has been made to remove the objectionable features. In other words, the fact that an article has been rejected does not mean that it will never be accepted. On the contrary, the Council aims to give all reasonable opportunity for reform. To this end, it has not thus far published its adverse findings as long as reform seemed possible (save in case of fraud and some other extreme instances). By furnishing to the manufacturers its specific reasons for rejection, it shows the direction in which reform is to be made. This, we believe, is all that should be necessary, and is as far as it would be wise for the Council to go. It can not be expected, and it would not be wise, for the Council practically to dictate the wording of the advertising matter, as has been asked by some; or to point out the very minimum of the changes which would be needed to bring a product up to the letter of the rules. A manufacturer must expect to be guided by the spirit of this movement; if he intends to adhere merely to the technicalities, he will be sure to infringe, sooner or later, intentionally or unintentionally. Such an attitude is not desirable. If he really wishes to reform he should plan to meet the objections of the Council to the fullest extent, and then ask to have his product reconsidered. Moreover, while the Council can not be expected to judge hypothetical cases, it stands ready to give an unofficial opinion as to whether contemplated changes will satisfy its requirements.

Another objection which is frequently raised is that the Council is arbitrary and autocratic in its interpretation of Rule 6: "No article will be admitted or retained of which the manufacturer or his agents make unwarranted, exaggerated or misleading statements as to therapeutic value." It is self-evident that questions of therapeutic value are often largely matters of opinion, and that the Council's judgment must then be more or less arbitrary. It is equally evident, however, that a line must be drawn somewhere, for disregard of the spirit of this rule has been mainly responsible for the "patent medicine" evil, and, indeed, suffices to class an article as a "patent medicine." The Council does its utmost to be absolutely fair in drawing this line; and whenever it judges that there is a sound basis for difference of opinion, it inclines to give the manufacturer the benefit of the doubt, to discount his natural enthusiasm for his product. On the other hand, the manufacturer should remember that the Council is in a sense in a better position to judge therapeutic questions without prejudice, for it has no interest in the matter, one way or the other, except to arrive at the truth.

With every wish to be liberal, however, the Council would not be doing its duty if it were to accept claims which have been disproved, or which are impossible, or excessively improbable. Doubtful claims can only be passed if a sufficient body of evidence from reliable observers is presented, to relieve the Council from responsibility; the quality and quantity of the required evidence being proportional to the improbability of the claims. Nor should manufacturers expect the Council to accept as evidence the statements of men whose sole contributions to medical literature consist in the endorsements of nostrums. Certain manufacturers seek exemption for statements of which they are evidently somewhat ashamed by publishing them as quotations or extracts from correspondents, articles or discredited text-books. The Council can not encourage this subterfuge, and holds a manufacturer responsible for every statement which he publishes.

A Food Law Development.

In the JOURNAL, March 16, 1907, page 967, we called attention to an alleged prescription which is shrewdly advertised in newspapers as a "simple home mixture which any druggist can put up. One of the ingredients, however, is a nostrum. This method of advertising is one way of evading the Food and Drugs Act.

A recent number of *Printer's Ink* directs attention to a similar case. The preparation in this instance has been widely exploited in the lay press, largely in advertisements made to appear as though they are reading matter, and is advertised as "Virgin Oil of Pine." *Printer's Ink* says:

"The preparation is put up in half-ounce bottles and is recommended in connection with glycerin and whisky, in a stated formula as a remedy for coughs and colds, lung troubles, etc. Under the pure food law, a cough remedy containing two and a half ounces of simple ingredients suspended in eight ounces of whisky would have to be marked with a label stating the percentage of alcohol. In such a case the percentage would be large. Eight ounces of whisky would be entirely truthful and not at all alarming to the purchaser, but the law prohibits such a statement and the percentage of alcohol, if stated, would appear so high as probably to cancel a good many sales where purchasers read the truthful label. To overcome this disadvantage in marketing, the company advertises its preparation alone and the reader is given a formula whereby he can compound his remedy himself. As the formula may be advertised without any statement of percentage of alcohol and as only whisky is mentioned, the remedy is divested of what under other circumstances might appear to be a dangerous remedy. Whether or not this concern has evaded the law is a question for others to decide. It has certainly got around what would have been in its case a serious commercial drawback."

Medical Advertisements in Religious Papers.

The following letter received from a correspondent emphasizes the importance and the value of physicians writing to editors of religious journals regarding their advertising pages. It also emphasizes the value of persistency:

To the Editor:—The question of the impropriety of religious newspapers accepting "patent medicine" advertisements is being discussed in your columns. Formerly the Pittsburg (Pa.) *Christian Advocate* contained such advertisements. Five or six years ago I corresponded with the editor in regard to the matter and he expressed his dissatisfaction with the affair and referred me to the business manager. I wrote many times to the latter party calling his attention to the fraudulent claims of some advertisements in the paper. To make a long story short, for over a year this class of advertising has been discontinued. I do not know that my writing hastened the matter, but I believe it contributed in a measure to the change. If the physicians who are readers of the various religious journals would take pains to enter their protest, repeating such protests as often as might be necessary, all such periodicals would in time be led to clean up their advertising columns.

Our correspondent's views emphasize the statement which has been repeatedly made in this department. No journal, unless it is run exclusively and solely as an advertising sheet and is distributed gratuitously, will continue to carry advertising matter known to be objectionable to a large number of subscribers, in the face of repeated protests from those subscribers. That the religious papers have been great sinners along these lines in the past is well known. If physicians wish to enjoy reading a religious journal free from objectionable advertisements they have only to follow the example of our correspondent and write to the manager, and keep on writing until the paper is improved.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

KENTUCKY State Board of Health, City Hall, Louisville, April 23 Secretary, Dr. J. N. McCormack, Bowling Green.

GEORGIA Regular Board of Medical Examiners, Capitol Building, Atlanta, April 30-May 1. Secretary, Dr. E. R. Anthony, Griffin.

TEXAS State Board of Medical Examiners, Austin, April 30-May 2. Secretary, Dr. T. T. Jackson, San Antonio.

TEXAS Eclectic Medical Board, Dallas, about April 25. Secretary, Dr. L. S. Downs, Galveston.

TENNESSEE State Board of Medical Examiners, Memphis, Nashville, and Knoxville, May 1. Secretary, Dr. T. J. Happel, Trenton.

NEVADA State Board of Medical Examiners, Carson City, May 6. Secretary, Dr. S. L. Lee, Carson City.

ILLINOIS State Board of Health, East St. Louis, May 8-10. Secretary, Dr. J. A. Egan, Springfield.

LOUISIANA State Board of Medical Examiners, New Orleans, May 9-10. Secretary, Dr. F. A. Larue, 211 Camp St., New Orleans.

MISSISSIPPI State Board of Health, State Capitol, Jackson, May 14. Secretary, Dr. J. F. Hunter, Jackson.

MASSACHUSETTS Board of Registration in Medicine, Room 15, State House, Boston, May 14-16. Secretary Dr. E. B. Harvey, Boston.

FLORIDA State Board of Medical Examiners (Regular), Jacksonville, May 15-16. Secretary, Dr. J. D. Fernandez, Jacksonville.

NEW YORK State Boards of Medical Examiners, Albany, May 21-24. Chief of Examining Division, Charles F. Wheelock, Albany.

NEBRASKA State Board of Health, State House, Lincoln, May 28-29. Secretary, Dr. Geo. H. Brash, Beatrice.

INDIANA Board of Medical Registration and Examination, Room 129, State House, Indianapolis, May 28-31. Secretary, Dr. W. T. Galt, Indianapolis.

Requirements for Practice in Japan.—Schwalbe reviews the requirements before physicians are admitted to practice in other countries, his article, "Zulassung im Auslande," appearing in the *Deutsche. med. Wochschr.* Nos. 1 and 12. He states that according to a law passed last May, Japan requires certain qualifications and a license from the minister of the interior before an outsider can practice medicine. Four years of medical study are the minimum requirement, and the right is reserved to refuse or revoke the license in case the applicant is a minor, or deaf, dumb or blind, has been imprisoned or has been fined for medical malpractice. The law provides that each physician must keep a record of all his patients, with name, age, residence, occupation, disease and treatment. This record must be preserved for ten years. The law further prohibits false announcements in regard to a physician's ability, and it also prohibits advertising of secret remedies by physicians. According to a decree issued last September, reciprocity is allowed with foreign states which admit Japanese physicians to practice, conferring the license without examination on presentation of due credentials. Great Britain, to date, he says, is the only country whose physicians can thus be admitted to practice in Japan without further red tape. Schwalbe urges reciprocity agreements between Germany and suitable foreign states. He is a little premature in regard to Great Britain's reciprocating with Japan, we believe, as the question is still under advisement in parliament.

North Carolina—Higher Requirements at Wake Forest.—The Medical Department of Wake Forest College has adopted the resolution that beginning with the session of 1908-9, certificates of recommendation for advanced standing in other medical colleges will be given only to students who have completed the two-year medical course and also the bachelor of science or bachelor of arts course. The two years work in medicine is elective in the B.S. degree and at the same time represents the first two years of work given in all first-class medical colleges.

Virginia University Adopts Higher Requirements.—The medical faculty at its last meeting passed a resolution to the following effect: Beginning with the session of 1910 the minimum entrance requirements shall be the completion of two years of work in an institution of recognized collegiate standing, including satisfactory courses in physics, biology, inorganic chemistry and a language, preferably German. By "satisfactory" courses is meant courses more or less equivalent to those given in the college department of the University of Virginia. The administration of these requirements will be, as at present, in the hands of an academic officer, the dean of the university, who passes on the entrance requirements of all the departments.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, CONTRACT PRACTICE, INSURANCE FEES, MEDICAL LEGISLATION, ETC.

Blue Earth County Organizes a Study Course.

Dr. A. G. Liedloff, secretary of the Blue Earth County (Minn.) Medical Society, writes:

"At the September meeting of our county society we decided to take up a regular course of study. Regular lessons were assigned and the chairman appointed members of the society as teachers to take charge of each meeting. It was also decided to meet weekly instead of monthly as heretofore.

"This plan was carried out with a fair degree of success, but, owing to the fact that one-third of our membership live outside of town, it was not considered advisable to use the funds of the society nor to expect the regular officers of the society to do the work of the study class of which the physicians in the city receive the greater part of the benefit. Accordingly, we organized the Study Section of the Blue Earth County Medical Society, adopting a constitution and by-laws and electing special officers. We began our work with 12 charter members, after issuing an invitation to all the members of the county society to join us. Our by-laws provide that any member of any county society, on application, may become a member of the study section. Dues are provided to cover actual expenses only. Meetings are held weekly at the office of the quiz master.

"The following outline for work has been placed in the hands of each member:

"March 6, Anatomy of the Chest. March 13, Diagnostic Methods.
March 20, Larynx and Pharynx. March 27, Bronchial Tubes.
April 3, Diseases of the Pleura. April 10, Pneumonia.
April 17, Tuberculosis. April 24, Chronic Diseases of the Lungs.
May 1, Anatomy and Physiology of the Heart.
May 8, Pericarditis and Functional Diseases of the Heart.
May 15, Organic Diseases of the Heart.
May 22, Diseases of the Diaphragm."

A Firm Stand Against Contract Practice.

Dr. James J. Hogan, secretary of the Solano County (Cal.) Medical Society, reports the results of the stand taken by his society on contract practice. Some years ago a number of fraternal orders having local lodges in Vallejo, the principal city in the county, adopted free medical services as one of the advantages of membership. Contracts were entered into with various physicians of the town at a nominal figure. Other organizations, seeing the advantages of such a plan, also adopted it, until almost every organization in the city was offering free medical services to its members. The Eagles, the Foresters, the Druids, the Maccabees, the Fraternal Brotherhood, and other orders, including even the women's lodges, furnished free medical service as one of the privileges of membership.

About a year ago the society adopted a resolution pledging the members to do no more lodge practice. This agreement was signed by every physician in Vallejo, both members and nonmembers. The lodges combined and imported a physician from Oakland, to whom was given all lodge work of the place. He made a contract for a year. At the expiration of his contract he left, evidently not finding the work either pleasant or profitable. Since that time, two other men have been imported to do lodge work. The members of the society, however, have, with one exception, kept their agreement, and have done no lodge work whatever. The member who broke the promise was expelled later. At the last meeting of the society, every member expressed himself as thoroughly satisfied with the year's work.

Utah Completes Reorganization.

The Salt Lake County (Utah) Medical Society has adopted the standard constitution and by laws for county societies in full. The *Utah Medical Journal*, in speaking of the matter editorially, says:

"This reorganization plan seems eminently proper, in that the physicians are in closer touch than ever before. The responsibility resting on the county societies is greater than ever before, as they, and they alone, are made the sole judges of the qualifications of the membership of the state association and

the American Medical Association. Thus the responsibility rests where the applicant is best known. The various schools of practice, so long as the fundamental requirements are the same, are less widely separated than ever before, and, as time goes on, the differences will grow less and less."

"How to Get Legislation."

The *South Carolina Medical Journal* has the following comment, which should be carefully considered by those interested in securing medical and sanitary legislation:

"We all know (or ought to know if we are old enough to be practicing medicine) that legislation is not accomplished in the effulgent sunlight of a noisy public; not on the hustings of a demagogic campaign meeting; nor even (where one might suppose) on the oratorical forum of the house of representatives. It is conceived, laid, and hatched, in political by-ways and hedges; around the corner, on the dead quiet; with soft words and apt reasoning.

"We must appeal to the personnel of the legislature. We must talk to our law-makers in person, quietly, sensibly, and withal forcibly and with reason. We may remind the legislator that we are striving to protect the public, himself included, from the appalling, if insidious, dangers of quackery and fakery; impress on him that it is not primarily for our good but for his own protection and that of his family that we ask this legislation. Professional aggrandizement plays no part in this appeal. We may point out to him that, as the state officially recognizes and licenses the profession of the state, surely he must agree that the associated members of the profession are best fitted to outline the necessary legislation for the preservation of the public health."

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

OXYDENDRON ARBOREUM.

HENDERSON, OKLA., April 5, 1907.

To the Editor:—What is *Oxydendron arboreum* and what are some of its effects and uses? I fail to find reference to it in anything at hand. J. T. MILLS, M.D.

ANSWER.—This plant is described in the United States Dispensatory, Eighteenth edition, as andromeda, *Oxydendrum arboreum*, sour wood or sorrel tree. It grows in the valleys of the Alleghanies from Pennsylvania to Florida. The leaves have a pleasant, acid taste, and are sometimes used by hunters to allay thirst. While it is used by some as a diuretic in treatment of dropsy, nothing definite is known regarding its properties.

INDUCED HYPEREMIA IN ACNE AND CORNEAL OPACITIES.

IMLAY CITY, MICH., April 8, 1907.

To the Editor:—I have a patient with acne and also one with a corneal opacity. I wish to treat them by the so-called Bier method. Will you tell me how tight a rubber band should be applied to the neck and for what length of time it should be left on.

M. B. MCCAUSLAND, M.D.

ANSWER.—According to R. Klapp, an assistant of Bier, a bandage is properly applied when the following conditions obtain: There must be no discomfort felt from the bandage itself nor in the congested region; in the latter there must be simply a feeling of fulness, but none of tingling, or as if the part were "going to sleep"; the member should be warm and eventually become warmer than the opposite side; and, a bluish-red color should appear, but the pulse must be easily felt. The rule is to apply the bandage for twenty-two hours, then loosen it and allow a pause of two hours, after which the bandage is reapplied. Congestion of the head is secured by the use of a cotton-rubber band, which is 3 cm. (1 1/5 in.) wide for adults and 2 cm. (4/5 in.) wide for children. The band has a row of eyelets on one side and a hook on the other so that the degree of hyperemia can be regulated by placing the hook in different eyelets. If the band presses on the neck this must be equalized by padding with cotton. Hyperemia induced by suction is advised by some for the eye, and it would seem as if the same method would also be applicable to acne. For a description and figures of some of the suction apparatus see THE JOURNAL, June 9, 1906, p. 1804.

TREATMENT OF EARACHE.

CHICAGO, April 2, 1907.

To the Editor:—One is struck, on reading medical journals, with the number of questions asked regarding the treatment of ear troubles. I would suggest that a formula be introduced in the next Pharmacopeia for a ready-made preparation suitable for the treatment of this condition. As the putting of potent drugs into the auditory canal may be dangerous, the general practitioner is sometimes at a loss to know what to prescribe both as to drug and to quantity. The National Dispensatory still gives the modified *Balsamum tranquillans* of the French Pharmacopeia, but the U. S. Pharmacopeia has no formula. Of course the busy practitioner will think of oil of thyme, chloroform, tincture of opium, etc., but how about exact quantities? Too little will make the throbbing, thumping and buzzing worse, whereas too much may cause serious complications. L. M. YOUNG, M.D.

ANSWER.—While our correspondent does not indicate what ear troubles he has in view he makes use of some expressions that lead us to suppose he means an ordinary earache, such as the general practitioner frequently meets, especially in children. The disease in question, under such circumstances, is almost invariably an acute otitis media, efther catarrhal or purulent in its character. Conditions of this kind have been combated by various remedies. Hot applications on the outside of the ear are usually helpful. Under this heading may be included hot-water bags, a covered Japanese hand stove, hot salt or bran bags, and considerable relief is often found from filling the fingers of kid gloves with hot salt and tying up the open ends. These little bags may be laid on a dish placed on the stove until thoroughly heated, then applied to the ear canal and covered with a thick cloth. In this way the heated bag comes into close contact with the tissues of the ear canal. The application of steam often gives prompt relief. A teacup is filled with boiling water, a wad of absorbent cotton pressed to the bottom of the cup, the water poured out and the cup applied over the ear. Many drugs are found useful in relieving pain and earache. An aural suppository, such as is manufactured by various pharmaceutical houses, each suppository containing ½ grain of morphin, 1-100 grain atropin, and ½ grain cocain, is efficacious. These drugs are held together with coca butter. They can be gently slipped into the ear and will melt with the heat of the body or their usefulness can be considerably accentuated by the application to the ear of a hot bag. These suppositories seldom fail to relieve earache, provided, of course, that the ear canal is reasonably clean and free from ear wax, etc. A common prescription is morphia sulphate, gr. ½; atropin sulphate, gr. ⅛; rose water, 3½. Two or three drops of this dropped in the ear will usually give immediate relief. Cocain is sometimes added. Many other combinations might be suggested, but most of them would contain one or all of the above ingredients under somewhat varying conditions. These suggestions are based on the supposition that our correspondent refers to acute otitis media with earache.

SYRUPUS ANTISCORBUTICUS.

CINCINNATI, April 6, 1907.

To the Editor:—I recently found the term "Syrupus Antiscorbuticus." I did not know what it was, and my library failed to enlighten me. I inquired of a number of my friends, both medical and pharmaceutical, and they also were unable to tell me. Hence I am compelled to appeal to you. E. S. MCKEE, M.D.

ANSWER.—This preparation is official in the Swiss Pharmacopeia and in the French Codex. Hager's "Handbuch der Pharmaceutischer Praxis" gives the following composition:

No.	Ingredients	Parts	
		Swiss	French
1.	Herba cochleariæ (common scurvy grass)	100	100
2.	Herba nasturtii offic. recentis (water cress)	100	100
3.	Radix armoraciæ recentis (horseradish root)	100	100
4.	Foliorum menyanthis (water shamrock)	20	10
5.	Cortex aurantii	25	20
6.	Cortex cinnamomi zeylonici	10	5
7.	Vinum albi	400	400
8.	Alcohol, 94 per cent	40	...
9.	Saccharum	550	500

According to the Swiss Pharmacopeia the directions for making this are as follows: Ingredients 1 to 8 are macerated for 5 days in a water bath. One hundred parts are distilled off; the remainder is percolated and after 6 hours the clear fluid is poured off. It is then boiled down to 350 parts and cooked to a syrup with the sugar. The distillate is then added.

TEST FOR BILE IN URINE.

MINNEAPOLIS, March 25, 1907.

To the Editor:—Can you give me a reference to a test for bile in the urine, in which a color reaction takes place, similar to the diazo reaction, on the addition of a solution of sulphanilic acid, hydrochloric acid and sodium nitrite? H. W. ALLEN, M.D.

ANSWER.—The test has been described by A. Raphiel (*St. Petersburg. med. Wochschr.*, abstracted in THE JOURNAL, Jan. 13, 1906,

115., and by Krokiewicz (*Muenchener med. Wochschr.*, abstracted in THE JOURNAL, June 9, 1906, 1808). Raphiel's test consists in using the ordinary diazo reaction. He uses the two solutions commonly employed, viz., solution 1: Sulphanilic acid 5 parts, hydrochloric acid 50 parts, distilled water 100 parts. Solution 2: Sodium nitrite 0.5 parts, distilled water 100 parts. The test for bile pigment can be performed in two ways, viz.: Either a solution containing 5 c.c. of solutions 1 and 2 or 3 drops of solution 2 is first prepared and mixed with 5 c.c. of the urine to be examined. If bile pigments are present the solution will promptly assume an amethyst color that in a short time turns to cherry red. The red color is quite apparent even in greatly diluted urines or in urines containing only minute quantities of bile pigments. Or the test may be performed by adding 2 or 3 drops of solution 2 to the urine and then 5 c.c. of solution 1; in this case the urine assumes a greenish or yellowish-green hue that within 24 hours passes into a cherry red.

The test of Krokiewicz is based on a similar principle, but he employs the various substances making up the diazo test reagent in a little different way. He employs, first, a 1 per cent. solution of sulphanilic acid; second, a 1 per cent. solution of sodium nitrite; third, pure hydrochloric acid. The test is performed as follows: Equal parts of solutions 1 and 2 are mixed; 0.5 c.c. of this mixture is added to 0.5 c.c. of the urine to be examined. If bile pigments are present the mixture of urine and reagent turns red. If now one or two drops of pure hydrochloric acid are added this red color promptly changes to a violet, which remains permanent for a long time. This test is very delicate and can, if necessary, be performed with a few drops of urine or other fluid to be examined for the presence of bile.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending April 13, 1907:

Rockhill, E. P., asst.-surgeon, granted 30 days' sick leave of absence.

Boards of medical officers as hereinafter constituted are appointed to meet April 29, 1907, at the places designated, for the purpose of conducting the preliminary examination of applicants for appointment in the Medical Department of the Army:

At Fort Jay, N. Y.: Richard, Charles, surgeon; Shimer, I. A., Whitmore, E. R., asst.-surgeons.

At Vancouver Barracks, Wash.: Crosby, W. D., surgeon; Flagg, C. E. B., asst.-surgeon.

At Columbus Barracks, Ohio: Raymond, H. I., surgeon; Ruffner, E. L., Metcalfe, R. F., asst.-surgeons.

At Fort Monroe, Va.: Carter, W. F., surgeon; Ragan, C. A., Smith, L. L., asst.-surgeons.

At Jefferson Barracks, Mo.: Bradley, A. E., surgeon; Pyles, W. L., Powell, W. A., asst.-surgeons.

At Ancon, Canal Zone: McCulloch, C. C., Jr., surgeon; Lyster, T. C., Crabtree, G. H., asst.-surgeons.

At Madison Barracks, N. Y.: Hallock, H. M., surgeon.

At Fort Sheridan, Ill.: Munson, E. L., surgeon.

At General Hospital, Washington Barracks, D. C.: Howard, D. C., Ashford, B. K., Huggins, J. B., asst.-surgeons.

At Fort Leavenworth, Kan.; Fuller, L. A., Clayton, J. B., Halloran, P. S., asst.-surgeons.

At Fort Porter, N. Y.: Hess, Louis T., asst.-surgeon.

At Fort Reno, Okla.: Edger, B. J., Jr., asst.-surgeon.

At Fort Ethan Allen, Vt., Robbins, C. P., asst.-surgeon.

At Fort Riley, Kan.; Reno, W. W., asst.-surgeon.

At Fort D. A. Russell, Wyo.: Davidson, W. T., asst.-surgeon.

At Fort Thomas, Ky.: Hathaway, L. M., asst.-surgeon.

At Fort Rosecrans, Cal.: Huntington, P. W., asst.-surgeon.

At Fort Snelling, Minn.: Webb, W. D., asst.-surgeon.

At Fort Logan, Colo.: Lambert, S. E., asst.-surgeon.

The board will be governed by instructions from the Surgeon-General of the Army, to whom the reports of the boards will be rendered direct.

Newgarden, George J., surgeon, ordered to report in person to Brigadier General Wm. P. Hall, adjutant general, president Army Retiring Board, appointed by Paragraph 8, S. O. 239, War Department, Oct. 9, 1906, at such time as he may designate, for examination by the board. For the purpose of examining Major Newgarden, the board will meet at Washington Barracks, D. C.

Usher, F. M. C., asst.-surgeon, granted 10 days' leave of absence.

Stark, Alexander N., surgeon, granted three months' leave of absence, to take effect on his being relieved from duty in the Philippines Division, and he is authorized to visit China and Japan.

Gosman, George H. R., asst.-surgeon, granted two months' leave of absence, to take effect after his arrival in the United States, and he is authorized to apply for an extension of one month.

Howard, D. C., asst.-surgeon, granted leave of absence for two months, to take effect June 1, 1907, with permission to apply for an extension of one month.

Wilson, W. H., asst.-surgeon, will proceed in due season to Fort Porter, N. Y., and report, on arrival, to the commanding officer for temporary duty as member of a board of officers to meet May 1, 1907, for examination of candidates for admission to the U. S. Military Academy. On completion of this duty he will return to Fort Hamilton, N. Y.

Kilbourne, E. D., asst.-surgeon, granted 14 days' leave of absence.

Mabee, J. I., asst.-surgeon, relieved from duty in the Philippines Division, and assigned to duty in the Army transport service, with station at San Francisco. Lieut. Mabee will relieve Asst.-Surgeon Pinkston, as surgeon of the transport *Sherman* on arrival at Manila, P. I.

Pinkston, O. W., asst.-surgeon, on being relieved from duty as surgeon of the transport *Sherman* by Asst.-Surgeon Mabee, will report in person to the commanding general, Philippines Division, for assignment to duty.

Bushnell, George E., surgeon, is detailed to represent the Medical Department of the Army at the meeting of the National Association for the Study and Prevention of Tuberculosis, to be held in Washington, D. C., May 6-8, 1907. Major Bushnell will repair to Washington in time to attend the meeting of the association, and on its adjournment will return to his proper station.

Morris, E. R., surgeon, will proceed to Washington Barracks, D. C., and report in person to the commanding officer, General Hospital, at that post for observation and treatment.

Gregory, J. C., asst.-surgeon, relieved from duty in the Army transport service, to take effect on completion of his examination for advancement, and ordered to Jefferson Barracks, Mo., for duty.

Bosley, J. R., asst.-surgeon, relieved from duty at Jefferson Barracks, Mo., and ordered to Fort Casey, Washington, for duty.

Hart, J. W., contract surgeon, left Fort Hunt, Va., for duty at Target Camp, Annapolis, Md.

Wall, Francis M., contract surgeon, left Fort Oglethorpe, Ga., on leave of absence for two months.

Hutson, T. O., contract surgeon, left Fort Saint Philip, La., for duty at proper station, Fort Moultrie, S. C.

Bell, R. P., contract surgeon, left Fort Wadsworth, N. Y., for temporary duty as surgeon of the transport *Kilpatrick*.

Woolley, Herbert C., contract surgeon, ordered from New York City to Vancouver Barracks, Wash., for duty in the Department of the Columbia.

Bayley, E. W., contract surgeon, ordered from Sleepy Eye, Minn., to Vancouver Barracks, Wash., for duty in the Department of the Columbia.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending April 13, 1907:

Langhorne, C. D., surgeon, detached from duty at the Naval Medical School Hospital, and ordered to the Navy Yard, Washington, D. C.

Riggs, R. E., P. A. surgeon, detached from the Naval Station, Port Royal, S. C., and ordered to the *Texas*.

Heiner, R. G., asst.-surgeon, detached from the Navy Yard, Washington, D. C., April 15, and ordered to attend course of instruction at the Naval Medical School, Washington, D. C.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended April 10, 1907:

Banks, C. E., surgeon, granted leave of absence for one month from about April 19, 1907.

Cobb, J. O., surgeon, granted leave of absence for one month or so much thereof as may be necessary on account of sickness.

Wertenbaker, C. P., surgeon, granted leave of absence for 1 day, April 11, 1907.

Stimson, A. M., asst.-surgeon, granted leave of absence for 7 days from April 6, 1907, under Paragraph 191 of the Service Regulations.

Robertson, H. McG., asst.-surgeon, directed to proceed to Philadelphia, for special temporary duty on completion of which to rejoin his station.

Salmon, T. W., asst.-surgeon, granted leave of absence for 1 day, March 2, 1907, under Paragraph 191 of the Service Regulations.

Ward, W. K., asst.-surgeon, granted leave of absence for 2 days, from March 20, 1907, under Paragraph 191 of the Service Regulations.

Ashford, F. A., asst.-surgeon, granted leave of absence for 1 day, March 2, 1907, under Paragraph 191 of the Service Regulations.

Frost, W. H., asst.-surgeon, granted leave of absence for 2 days from March 30, 1907, under Paragraph 191 of the Service Regulations.

Kastle, J. H., chief of division of chemistry, Hygienic Laboratory, granted leave of absence for 9 days from April 11, 1907.

Buonocore, E., acting asst.-surgeon, granted leave of absence for 15 days from Jan. 23, 1907, on account of sickness.

Delgado, J. M., acting asst.-surgeon, granted leave of absence for 6 days in March, 1907, under Paragraph 210 of the Service Regulations.

Duke, B. F., acting asst.-surgeon, granted leave of absence for 3 days from April 10, 1907.

Griffitts, T. H. D., acting asst.-surgeon, granted leave of absence for 21 days from April 12, 1907.

Kennard, K. S., acting asst.-surgeon, granted leave of absence for 1 day, March 8, 1907, under Paragraph 210 of the Service Regulations.

Schwartz, Louis, Acting asst.-surgeon, granted leave of absence for 2 days, March 3 and 10, 1907, under Paragraph 210 of the Service Regulations.

BOARD CONVENED.

A board of medical officers was to meet at New Orleans, April 9, 1907, for the examination of an alien immigrant. Detail for the Board: Surgeon J. H. White, chairman; P. A. Surgeon R. L. Wilson; Acting Asst.-Surgeon J. T. Scott, recorder.

Health Reports.

The following cases of smallpox, yellow fever and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended April 12, 1907:

SMALLPOX—UNITED STATES.

California: San Francisco, March 24-30, 1 case.
Kansas: Topeka, March 16-30, 3 cases.

Massachusetts: Lawrence, March 23-30, 19 cases.
Minnesota: Winona, March 23-30, 2 cases.
Missouri: St. Joseph, March 22-29, 10 cases.
New Jersey: Newark, March 23-30, 2 cases.
New York: 11 Counties, Jan. 1-March 2, 56 cases; Broome County, epidemic.
North Carolina: Greenboro, March 23-30, 3 cases.
Ohio: Canton, March 2-9, 2 cases; March 25-31, 1 case.
South Dakota: Sioux Falls, March 23-30, 1 case.
Tennessee: Nashville, March 23-30, 1 case.
Virginia: Richmond, March 23-30, 1 case.
Washington: Spokane, March 23-30, 12 cases.
Wisconsin: La Crosse, March 23-30, 1 case.

SMALLPOX—FOREIGN.

Brazil: Bahia, Feb. 16-March 9, 6 cases; Pernambuco, Feb. 1-15, 64 deaths.
Canada: New Brunswick: Kent County, March 23-30, present; Nova Scotia: Antigonish County, present; Colchester County, present: Digby County, present; Halifax County, present; Pictou County, present; Yarmouth County, present.
China: Hongkong, Feb. 16-March 2, 31 cases, 24 deaths.
Ecuador: Guayaquil, Feb. 16-28, 5 deaths.
France: Canne, Feb. 1-28, 1 case, 1 death.
Italy: General, March 7-2, 34 cases.
Mexico: Guerrero State, March 27, epidemic.

SMALLPOX—INSULAR.

Philippine Islands: Manila, Feb. 23-March 2, 2 deaths.

YELLOW FEVER.

Brazil: Manaos, March 2-16, 6 cases; Para, March 9-16, 4 cases, 2 deaths.
Cuba: Habana, April 5, 1 case (origin Nueva Paz).
Ecuador: Guayaquil, Feb. 16-28, 13 deaths.
Mexico: Merida, March 17-23, 2 cases, 1 death.
West Indies: Trinidad: Port of Spain, March 8-16, 1 case, 1 death.

PLAGUE—INSULAR.

Hawaii: Honolulu, April 7, 1 death.
Brazil: Bahia, Feb. 16-March 9, 10 cases; Pernambuco, Feb. 1-15, 3 deaths.
Peru: Chiclayo, Feb. 28, 4 cases, 4 deaths; Eten, 6 cases, 4 deaths; Lambayeque, 2 cases, 1 death; San Pedro and Pacasmayo, 2 cases; Trujillo, 2 cases.

Marriages

J. FRANK MCGUIRE, M.D., to Mrs. Ella M. Churchill, both of Alpena, Mich., April 1.

BEVERLY RANDOLPH TUCKER, M.D., to Miss Elsie Boyd of Richmond, Va., April 3.

PHILIP DONOHOO, M.D., to Miss Anzelett Lowdermilk, both of Joplin, Mo., March 27.

OLEANDER HOWTON, M.D., to Miss Edith Olivia Johnson, both of Osceola, Ark., April 17.

WILLIAM B. MCDONALD, M.D., Baltimore, to Miss Maude Arnold, at Baltimore, April 3.

FRANK EARL BELLINGER, M.D., Council Bluffs, Iowa, to Miss Edna Hunt, at Lexington, Ky., April 6.

GUY RUSSELL JONES, M.D., Orlinda, Tenn., to Miss Winnie Carter Taylor of Franklin, Ky., March 12.

TIMOTHY J. FOLEY, M.D., Worcester, Mass., to Miss Anna Irene Morris of Roxbury, Boston, recently.

OSMER M. WILLIS, M.D., to Miss Florence M. Gilpin, both of Marietta, Ohio, at Parkersburg, W. Va., April 2.

HERBERT S. FAIRALL, M.D., Deer River, Minn., to Miss Edith Callahan of Duluth, at Grand Rapids, Minn., March 22.

Deaths

George Rubens Shepherd, M.D. Medical Institution of Yale College, New Haven, 1866; a member of the American Medical Association; medical cadet during the Civil War; since 1880 medical director of the Connecticut Mutual Life Insurance Company; sometime president of the Hartford City Medical Society, Hartford County Medical Society and Association of Life Insurance Medical Directors; lecturer on life insurance medical examinations at Yale Medical School; cousulting physician to the Hartford Hospital; a member of the board of visitors to the Hartford Retreat for the Insane and a member of the advisory board of the *Yale Medical Journal;* at one time a member of the board of school visitors of Hartford; an authority on life insurance statistics, and a thorough, careful and painstaking medical practitioner, who was stricken with cerebral hemorrhage in August last, died March 30, at his home in Hartford, from pneumonia, aged 64. At Dr. Shepherd's funeral the honorary pallbearers were members of the various societies with which he was connected. The Hartford Medical Society held a special meeting, April 3, to take action on the death of Dr. Shepherd.

Edward Janney Sidwell Lupton, M.D. Johns Hopkins Medical School, Baltimore, 1903; a member of the National Association for the Study and Prevention of Tuberculosis and of the Hendersonville (N. C.) Medical Association; demonstrator of anatomy in George Washington University and interne at Columbia Hospital, Washington, during 1903 and 1904; assistant in the Adirondack Sanitarium, Trudeau, N. Y., from November, 1904, to September, 1906, and thereafter a practitioner at Hendersonville, N. C., died at the home of his parents near Martinsville, W. Va., from pulmonary tuberculosis, March 23, after an illness of two years, aged 29.

Ashbel Parmelee Grinnell, M.D. Bellevue Hospital Medical College, New York City, 1869; for many years dean of the Medical Department of the University of Vermont; vice-president of the New York Medicolegal Society and an expert in medicolegal practice; a member of the state and county medical societies, died in his apartments in New York City, April 6, from septic endocarditis, following a severe attack of epidemic influenza, aged 61.

John Henry Wiggins, M.D. University of Buffalo (N. Y.), Medical Department, 1879; a member of the state medical society; for several terms president of the Chautauqua County and of the Jamestown Medical societies; one of the incorporators of the Chautauqua School of Nursing, and one of the foremost practitioners of western New York, died at his home in Jamestown, April 1, from nephritis, after a long illness, aged 52.

Luman A. Noyes, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1862; surgeon of Vermont volunteers and of the Nineteenth Pennsylvania Volunteer Cavalry during the Civil War; thereafter a practitioner of Randolph, Vt., until 1880, when he was appointed post surgeon and later agent at Seal Island in the Behring Sea, died at Chicopee, Mass., January 14, from cirrhosis of the liver, aged 66.

James S. Corn, M.D. Vanderbilt University, Medical Department, Nashville, Tenn., 1878; a member of the American Medical Association; president of the Howard County (Ark.) Medical Society, and one of the most prominent and widely known practitioners of southwestern Arkansas, died suddenly, April 4, in his buggy, from heart disease, five miles from his home in Nashville, aged 56.

William J. Rush, M.D. Howard University, Medical Department, Washington, D. C., 1898; one of the founders of the Potomac Hospital, and a member of the Medico-Chirurgical Society, died at his home in Washington, D. C., April 4, from pneumonia, after an illness of one week, aged 35.

Simon Peter Graham, M.D. Harvard University Medical School, Boston, 1903; a member of the American Medical Association and a fellow of the Rhode Island Medical Society; visiting physician to St. Joseph's Hospital, Providence, R. I., died at his home in that city, Dec. 31, 1906, aged 41.

John Hotaling, M.D. Albany (N. Y.) Medical College, 1863; at one time coroner of Scoharie County and for more than forty years a practitioner of Gallupville, N. Y., died at his home in that village, March 30, from cerebral hemorrhage, after an illness of six days, aged 69.

Mason A. Sheffield, M.D. Bellevue Hospital Medical College, New York City, 1864; a veteran of the Civil War, and since 1872 a practitioner of St. John, N. B., and a regent of Mount Allison College in that city, died suddenly at his home, March 30, from heart disease, aged 70.

Robert T. Harrison, M.D. Missouri Medical College, St. Louis, 1882; a member of the American Medical Association, and one of the most prominent practitioners of South Central Missouri, died at his home in Dixon, April 4, after an illness of about a year, aged 51.

Joseph Augustus Aldrich, M.D. Castleton (Vt.) Medical College, 1847; acting assistant surgeon, U. S. Army, from Oct. 1, 1863, to May, 1864, when he was on duty during the Indian troubles at New Ulm, Minn., died in New York City, January 4, aged 89.

John Presley Fletcher, M.D. Medical Department of the University of New Orleans, 1875; a member of the state and county medical societies, died at his home in Lonoke, Ark., March 9, from capillary bronchitis, after an illness of three weeks, aged 80.

Charles M. Willis, M.D. Rush Medical College, Chicago, 1877; a member of the state and county medical societies, and secretary of the local U. S. Board of Pension Examining Physicians; died at his home in Berlin, Wis., April 1, from neurasthenia, aged 57.

Samuel V. Fitzsimmons, M.D. University of Nebraska, College of Medicine, Lincoln and Omaha, 1901; of Globe, Ariz.; a member of the state and county medical societies, died in Miller Valley, near Prescott, Ariz., January 2, from tuberculosis, aged 33.

George W. Biggers, M.D. Beaumont Hospital Medical College, St. Louis, 1889; a member of the American Medical Association, and a pioneer practitioner of Eastern Oregon, died at the home of his son in La Grande, Ore., March 21, aged 71.

Dicia Houston Baker, M.D. Laura Memorial Woman's Medical College, Cincinnati, 1898; a member of the American Medical Association, died at her home in Birmingham, Ala., April 4, after an illness of more than two months, aged 44.

J. G. Hardy, L.R.C.S.; L.R.C.P. Edinburgh, 1879; one of the best known physicians of the Moose Mountain (Sask.) district and justice of the peace for his district, died at his home in Carlyle, January 14, after an illness of two weeks.

Robinson Britton Price, M.D. Faculty of Medicine of Queen's University and Royal College of Physicians and Surgeons, Kingston, Ont., 1866; a practitioner of Lonsdale, Ont., died in Chicago, January 2, from pneumonia, aged 69.

Thomas M. Woodson, M.D. University of Louisville (Ky.), Medical Department, 1850; a practitioner of Gallatin, Tenn., since 1874, died at his home in that city, February 12, after a prolonged illness, from paralysis, aged 76.

Herman E. McMillen, M.D. Western Pennsylvania Medical College, Pittsburg, 1891; a member of the state and county medical societies, was found dead in bed at his home in New Castle, Pa., April 6, aged 45.

Jahiel C. Kilgore, M.D. Rush Medical College, Chicago, 1869; a member of the American Medical Association, died at his home in Monmouth, Ill., April 9, from septicemia, due to an autopsy wound.

Walter Forsythe Finnie, M.D. Cooper Medical College, San Francisco, 1885; died recently after a surgical operation, and was buried from the family residence in San Francisco, April 1, aged 49.

Thomas E. Buck, M.D. Dartmouth Medical School, Hanover, N. H., 1860; a member of the state and county medical societies, died at his home in St. Louis, April 2, from dropsy, aged 71.

David W. Garver, M.D. University of Wooster, Medical Department, Cleveland, Ohio, 1869; died at his home in West Salem, Ohio, from disease of the liver of long standing, aged 60.

Dixon Gough, M.D. University of Maryland School of Medicine, Baltimore, 1844; died at his home in Baltimore, April 8, from heart disease, after an illness of one month.

William N. Sullivan, M.D. Cooper Medical College, San Francisco, 1892; formerly a surgeon in the Navy, died January 31, at his home in San Francisco, aged 35.

Alfred Russell Starr, M.D. College of Physicians and Surgeons in the City of New York, 1880, died at his home in New York City, January 11, aged 48.

Frederick A. Cady, M.D. Michigan College of Medicine and Surgery, Detroit, 1896; of Flint, Mich.; died Dec. 26, 1906, at Waynesboro, Ga., aged 57.

Kossuth Coates, M.D. Vanderbilt University, Medical Department, Nashville, Tenn., 1880; died at his home in Wilton, Ark., Dec. 11, 1906, aged 54.

Augustus M. Erwin, M.D. Homeopathic Hospital College, Cleveland, 1882; died at his home in Mantau Station, Ohio, February 2, aged 63.

Stanley A. DuPaul, M.D. Detroit (Mich.) Medical College, 1883; died at his home in Carleton, Mich., April 7, from lung disease, aged 48.

James A. Williams, M.D. Berkshire Medical College, Pittsfield, Mass., 1848; of Algansee, Mich., died Dec. 20, 1906, aged 86.

Remaldo D. Clark, M.D. Rush Medical College, Chicago, 1875; died at his home in Akron, Iowa, Dec. 7, 1906, aged 64.

William H. Fairfax, M.D. Medical College of Virginia, Richmond, 1858, died at his home in Hague, Va., April 3, aged 72.

J. H. Cain, M.D. Eclectic Medical Institute, Cincinnati, 1884, died at his home in Redondo, Cal., January 6, aged 60.

Elias W. Wood, M.D. Geneva (N. Y.) Medical College, 1850, died at his home in Oak Park, Ill., April 7.

Society Proceedings

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Atlantic City, June 4-7.

Medical and Chir. Faculty of Maryland, Baltimore, April 23-25.
Amer. Confed. Reciprocating, Exam. & Lic. Bds., Chicago, April 30.
American Therapeutic Society, Washington, May 4-7.
Association of American Medical Colleges, Washington, May 6.
Amer. Assn. of Genito-Urinary Surgeons, Washington, May 7-9.
Am. Assn. of Pathologists and Bacteriologists, Washington, May 7-9.
Amer. Climatological Association, Washington, May 7-9.
American Gynecological Society, Washington, May 7-9.
Amer. Laryngological Association, Washington, May 7-9.
Amer. Medico-Psychological Association, Washington, May 7-9.
American Ophthalmological Society, Washington, May 7-9.
American Orthopedic Society, Washington, May 7-9
American Pediatric Society, Washington, May 7-9.
American Assn. of Physicians, Washington, May 7-9.
American Surgical Association, Washington, May 7-9.
Nebraska State Medical Association, Lincoln, May 7-9.
Texas State Medical Association, Mineral Wells, May 7.
Utah State Medical Association, Salt Lake City, May 7-8.
New Mexico Medical Association, Las Cruces, May 8-9.
Kansas Medical Society, Kansas City, May 8-10.

TENNESSEE STATE MEDICAL ASSOCIATION.

Seventy-fourth Annual Session, held at Nashville, April 9-11, 1907.

The President, DR. L. A. YARBROUGH, in the Chair.

Officers Elected.

The following officers were elected: President, Dr. A. B. Cooke, Nashville; vice-presidents, Dr. R. E. Fort, Nashville; Dr. Charles P. McNabb, Knoxville; Dr. R. W. Tate, Bolivar; secretary, Dr. Geo. H. Price, Nashville, reelected; treasurer, Dr. W. C. Bilbro, Murfreesboro, reelected; delegate to American Medical Association, Dr. S. W. Woodyard, Greenville; alternate, Dr. C. E. Ristine, Knoxville.

Knoxville was selected as the place for holding the next annual meeting.

Management of Occipito-Posterior Presentations.

DR. G. C. TRAWICK, Nashville, reported three cases and emphasized the fact that such cases require close attention, and that Nature should be depended on, at first, to accomplish delivery; when she has exhausted her forces, the attendant should complete the delivery.

DR. T. J. HAPPEL, Trenton, said the general practitioner has these cases to contend with now and then; he should be able to recognize them, so that proper steps may be taken, if possible, to change the position of the fetus from posterior to anterior. If it cannot be done, one should not delay and allow the patient to become exhausted by a protracted labor, hoping Nature will do what she usually often fails to do, but apply forceps promptly.

Pseudo-Muscular Hypertrophy.

DR. J. R. RATHMELL, Chattanooga, reported a case of this affection which was accompanied by chorea. He related two cases which occurred in the same family and two others of which he had knowledge.

DR. CHARLES P. MCNABB, Knoxville, said that in 1898-9, he saw a boy with pseudo-muscular hypertrophy. A brother of the patient died three or four years previously of the same condition. This child developed chorea, then endocarditis, and two years later he succumbed from the effects of mitral insufficiency.

General Anesthesia with Chloroform and Ether.

DR. HERMAN HAWKINS, Jackson, confines himself to these anesthetics for three reasons: (1) Because the problem of a perfect general anesthetic is still unsolved. (2) Universal use requires general knowledge, and efforts should be made to perfect individual skill in administration by reviewing and emphasizing familiar, but important, features of the subject. (3) For the sake of brevity. Personally, he prefers ether, but not to the exclusion, entirely, of chloroform. On the contrary, he urges every physician to be familiar with the administration of both, and to be prepared to say which should be selected in a given case. The anesthetist should be guided by this rule, Give

all needed, but not one drop more than is necessary. Time each administration and measure the amount of drug used in every case.

Needs of a Physician.

DR. L. A. YARBROUGH said that the medical embryo should have a normal heritage. He means by this, pure blood circulating through a sound body, nourishing an evenly balanced nervous system, supported by a firm osseous structure, clothed with well-rounded muscles, rendered strong by plenty of exercise either in work or athletics. The foundation for his education should be very carefully looked after. He should be taught at home, at the common school, at the high school, the college, and at the university, how to think, how to obtain practical knowledge from books, and how to learn something from everybody and everything with which he comes in contact. If he would become a great scholar he must needs find in study a pleasure, not a drudgery. A taste for study must be cultivated. He needs to have a practical education, in addition to what is commonly called good horse sense, for in learning the theoretical, the practical must not be neglected. He must have a sound body to possess the strength to sustain those qualities which will enable him to surmount all obstacles encountered in the exercise of that art, which is trying to a man's soul, much less his body, and a sound mind to generate the wisdom whence comes the science and the art.

Legislation.

DR. A. B. COOKE, Nashville, related the experience that he and the other members of his committee had in trying to get certain bills through the state legislature. The committee, however, notwithstanding the bitter opposition encountered from the drug trade, was successful in getting a pure food law passed, for which the association voted its unanimous thanks.

(To be continued.)

ST. LOUIS MEDICAL SOCIETY.

Regular Meeting, held March 23, 1907.

The President, DR. JOHN C. MORFIT, in the Chair.

Re-Education in Organic Lesions of the Cord.

DR. MARC RAY HUGHES presented two patients to illustrate his reconstruction of an old method of re-education of the motor fibers in sclerosis. Instead of using the stair or step method advocated by Fraenkel, Dr. Hughes urges these patients to use their minds to control the muscles all over. The patient is also told to wear rubber heels so as not to become to familiar with the touch of the floor. The treatment consists more of exercises than anything else, although tonic treatment is also included. These patients simply do what they are told, thus re-educating the muscles unconsciously.

Injection of Gasserian Ganglion Through Foramen Ovale for Trifacial Neuralgia.

DR. V. P. BLAIR employed the method described by Ostwald in one case of trifacial neuralgia with good result. The patient had had an attack of grip about nine years ago, and following this there appeared a tic, mostly of the maxillary division of the fifth nerve, although some of the fibers of the second nerve were also involved. The man was never without pain, although at times there were remissions in the attacks. There was a good deal of shock after the first injection, and the patient complained of a tingling sensation over the root of the nerve, but the neuralgia was better. At the end of a week the pain returned, but after the third attempt at injection, when the Gasserian ganglion was reached, there was absolute cessation of the pain and a complete anesthesia. There has been no return of the neuralgia since then.

DISCUSSION.

DR. W. M. C. BRYAN asked whether any untoward effects follow injection of the Gasserian ganglion or of any nerve.

DR. LOUIS HAUCK said that in two cases in which he made use of this method of treatment, the first branch of the third nerve was affected, causing bulging of the eye, strabismus, and a slight ptosis. All these signs disappeared later. Dr. Hauck has modified the Ostwald method slightly. He passes the needle along the superior maxillary bone until resistance is met. In order to reach the third branch the needle is passed along the ramus to the pterygoid process; then along the base of the skull until the needle slips from the bone, entering the foramen ovale. He said that even if one should fail to reach it exactly, the injection of the alcohol will not fail to produce the desired results.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, held March 20, 1907.

The President, DR. GEORGE W. WEBSTER, in the Chair.

Relation of Tonsillitis to Rheumatism.

DR. E. FLETCHER INGALS said that he has gradually fallen into error regarding the relation of tonsillitis and rheumatism, and that what has appeared to him merely casual is, in fact, due to an identical cause for the two affections in from 13 to 29 per cent. of all cases of acute tonsillitis. Forty-five per cent. of the cases of tonsillitis have a rheumatic history, but 16 per cent. of other affections of the throat and chest also have a rheumatic history, so that not more than 29 per cent. of the cases of acute tonsillitis can fairly be attributed to the rheumatic poisons, and more than half of these are very doubtful. Among his patients only 19 per cent. gave a history of previous attacks of articular rheumatism and 18 per cent. a history of muscular pains that they ascribed to rheumatism. Eight per cent. of the cases of acute tonsillitis were attended by or immediately followed by articular rheumatism; the same number claimed to have had muscular rheumatism, while in 5 per cent. the rheumatic attacks immediately preceded the angina. There is not as yet, he said, sufficient evidence to prove that the tonsil is the only or even the chief portal of entrance for the rheumatic poison. Considering, however, that, in all probability, acute articular rheumatism represents a mild type of septic hematogenic infection of the joints, there is no reason why the tonsil with its notorious facility for infection with pyogenic germs should not, possibly, even frequently, assume the rôle of an infected wound leading to septic consequences of a systemic nature. These septic conditions vary in degree and location, and rheumatism is, perhaps, one of the phenomena. The evidence does not justify the belief that inflammation of the tonsil may prevent or take the place of an attack of rheumatism. The statement that the acute beginning of muscular rheumatism is nearly always preceded by tonsillitis is not supported by the histories of his cases, as in only 2 per cent. did muscular rheumatism follow tonsillitis. However, in 6 per cent. muscular pains that were called rheumatism attended the tonsillitis, though these may have been due to the fever attending the inflammation of the tonsils.

DISCUSSION.

DR. J. A. CAPPS referred to the type of cases with acute cervical adenitis that occurs especially in children with a simple sore throat. This combination of sore throat and adenitis is important for two reasons: First, the combination has in the last year been more prevalent than usual, and, second, an interesting feature is the etiology of these infections. The clinical picture is this: A child has a sore throat, with high temperature and a correspondingly rapid pulse. On examination the throat is not ulcerated, nor is there any follicular tonsillitis, but simply a red, congested throat. The soft palate, tonsils, pharynx and nasopharynx take part in this redness equally. The temperature remains high for several days. The infection is more severe than one expects from the first examination; then gradually the temperature subsides. Perhaps there has been a slight glandular swelling, but not pronounced, when the symptoms exacerbate. The temperature rises usually to 104-5°; the pulse is rapid again; the child seems quite as ill or more so than at the first visit, and there is noticeable a decided swelling of the cervical glands, particularly near the

angle of the jaw, involving the deep cervical glands. The enlargement of the glands, at first discrete, is very apt to become diffuse, and is very rapid in its progress, until the lump becomes the size of a hen's egg or the size of a fist. Usually it is quite hard and tender, irregular in outline, so that the individual glands can not be made out definitely. This tumor mass may remain without much change; the elevation of temperature continuing for a week or two, possibly longer, when it either begins to subside or else the case goes on to suppuration. A red spot appears at some point, and either suppurates spontaneously or is opened, a small quantity of pus being evacuated. Usually the whole group of glands does not suppurate, but only a portion of them. He has seen five such cases which would come within this group. Cultures were taken from the throat in four, and in all four influenza bacilli were found in considerable number. There were present also streptococci or staphylococci. Two of the cases went on to suppuration, and the pus from both showed streptococci in large numbers.

DR. D. N. EISENDRATH said that cases of acute enlargement of the lymph nodes of the neck probably correspond to some extent with those described by Pfeiffer in 1899 as glandular fever. In the cases which he saw the enlargement of the lymph nodes was out of proportion to the height of the temperature. A child, for instance, would have a temperature of 104-5°, with a relatively small number of lymph nodes enlarged, not larger, perhaps, than the average-sized marble. During the present winter these cases have assumed a different type, in that not only have they affected the lymph nodes of the neck, following primary sore throat, but they have affected other lymph nodes, as those of the axilla, the groin, apparently taking part in the process of a general infection, so that in some cases it was thought there was an acute lymphatic leukemia until the blood was examined. He said there have been reported 11 undoubted cases of primary tuberculosis of the tonsil, the majority of them having been verified by autopsies and by finding primary tuberculosis of the tonsil, in which there were no other tubercle bacilli found in the body, the primary focus being in the tonsil, with secondary involvement of the lymph nodes of the neck. A surgeon in operating for tubercular glands of the neck should also remove the tonsils and adenoids. As to the relation between appendicitis and tonsillitis, scarcely a winter has passed during the last two or three years without surgeons having seen tonsillitis in children followed by typical attacks of appendicitis, so that clinically the association of the two diseases is quite well established.

DR. R. H. BABCOCK said that in a very large percentage of cases the portal of entrance of the infection is the tonsil. A large percentage of the cases he sees are instances with some form of heart disease, and nearly all which he has investigated have shown either diseased tonsils or a history of previous sore throat. He believes the trend of investigation is to the effect that we must abandon the old notion that acute articular rheumatism is a blood disease in the sense of its being due to some chemical irritant; in fact, it is a specific disease, and there have been a great many observations made which go far to prove that the micro-organism responsible for attacks of acute articular rheumatism of the classical type is a diplococcus allied to the streptococcus, and which has been called the diplococcus rheumaticus.

With reference to the importance played by follicular tonsillitis in the production of acute endocarditis, he cited the instance of a young man in Chicago who developed an acute tonsillitis which subsided apparently in a few days. The patient, however, did not fully regain his health, and later developed symptoms which at first were thought to be those of typhoid fever. The disease proved to be a streptococcus infection with malignant endocarditis, pure streptococci having been obtained from the blood. The patient died six months later. The autopsy substantiated the diagnosis which had been made during life. In this case it was clear that infection started in the tonsil; that it was apparently a trifling tonsillitis, and yet it resulted in the man's death six months later.

DR. FRANK S. CHURCHILL said that a child with enlarged and diseased tonsils is constantly exposed to repeated infections, such as those produced by the streptococcus and influenza bacillus; also the more serious infections, such as those produced by the Klebs-Loeffler bacillus and scarlatina. He always advises removal of adenoids and enlarged tonsils, if possible, in the late spring or summer, on account of the climatic conditions, for he has repeatedly seen children from whom adenoids and tonsils have been removed have persistent colds throughout the winter. The pediatrician does not see an arthritis in the most common and frequent manifestation of rheumatism. He sees, rather, endocarditis. Other manifestations of rheumatism are subcutaneous enlargements, erythema, pleurisy, appendicitis and chorea. Amberg, of Baltimore, who tested the opsonic index of breast-fed and bottle-fed babies, found that, as a rule, the index of breast-fed babies runs higher than does the index of bottle-fed babies, showing the greater resistance on the part of such babies to infectious diseases.

DR. W. L. BALLENGER said that the trend of opinion is that the tonsils are a source of infection not only of tuberculosis, but of rheumatism and many other conditions. He has removed many hundreds of tonsils with the capsule intact, and has yet to find many cases in which the crypts did not extend very near to the capsule. In order to remove the atrium of infection in these cases, the tonsils should be removed to the depth of the crypts, and the easiest and most certain way to do that is to remove the tonsil with its capsule.

DR. C. M. ROBERTSON said there have been more than 11 cases of primary tuberculosis of the tonsil reported up to the present time; but there were only 11 cases found postmortem, because by primary tuberculosis is meant that we are unable to find tuberculosis in other parts of the body than the tonsil as determined by the microscope. He agrees with Dr. Eisendrath that when removing tubercular glands of the neck it is necessary to remove also the tonsils, as the relationship between the two is now established.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and methods of treatment for the diseases seen especially in every-day practice. Contributions will be welcomed from our readers.]

Ointments.

(*Concluded from page 1294.*)

PHARMACOPEIAL PREPARATIONS.

Many good ointments are given in the United States Pharmacopeia, which we can prescribe if we are in doubt as to the proper amounts of the various ingredients used. The following are in the present Pharmacopeia:

Unguentum.	*Unguentum.*
Acidi Borici,	Hydrargyri Oxidi Rubri,
Acidi Tannici,	Iodi,
Aquæ Rosæ,	Iodoformi,
Belladonnæ,	Phenolis,
Chrysarobini,	Picis Liquidæ,
Diachylon,	Potassii Iodidi,
Gallæ,	Stramonii,
Hydrargyri	Sulphuris,
Hydrargyri Ammoniati,	Veratrinæ,
Hydrargyri Dilutum,	Zinci Oxidi,
Hydrargyri Nitratis,	Zinci Stearatis,
Hydrargyri Oxidi Flavi,	

It might be well at this point to call attention to the fact that all medicines are limited in their action in any pathologic condition, and that the claims made for many of the proprietary ointments are ridiculous. Pharmaceutically they may be elegant, but therapeutically they are not superior to the above list, which nearly covers the ground of treatment as applied by ointments.

CERATES.

It is often desirable to have a firmer base to carry our active principles, especially when a local protective action is also desired. This is accomplished by adding more wax, as illustrated by the U. S. P. Ceratum:

Ceræ albæ	℥i	30
Petrolati albi	℥v	20
Adipis benzoinati	℥xiiss	50

Notice that this mixture contains 30 per cent. of wax, while the Unguentum contains 20 per cent. Cerates are generally used for local effect alone, as illustrated in the list given in the U. S. P.:

Ceratum.	*Ceratum.*
Camphoræ,	Resinæ,
Cantharidis,	Resinæ Compositum.
Plumbi Subacetatis,	

A convenient use of the terms unguentum and ceratum is in the direction to the druggist, when prescribing a salve, to designate the firmness desired.

OTHER MEDIA.

In addition to the mineral, vegetable, and animal fats described, there are other media which fulfill the same indications:

Oleates.—As stated above, olein is a glycerid of oleic acid. If the oleic acid be combined with other substances we have a class called oleates which can be applied alone to the surface of the body or in combination with other fats. The list of oleates on the market is large, but only the following are found in the U. S. P.:

Oleatum.

Atropinæ	2 per cent. of Atropin
Cocainæ	5 per cent. of Cocain
Hydrargyri	25 per cent. of Mercury
Quininæ	25 per cent. of Quinin
Veratrinæ	2 per cent. of Veratrin

The reputed advantage of this class is the rapidity of absorption.

Lanolin.—Another class is the fat derived from the wool of sheep, which, closely resembling the secretions of the sebaceous glands of man, is readily absorbed. It was put on the market as Lanolin and given in the U. S. P. as Adeps Lanæ without water, and Adeps Lanæ Hydrosus, with about 30 per cent. water. Its chemical nature is entirely different from the other fats; it does not decompose and so can carry substances which the others can not; it absorbs an equal quantity of water (adeps lanæ hydrosus) does not contain more than 30 per cent., enabling it to carry many salts in solution.

Cacao Butter.—Cacao butter (Oleum Theobromatis) has a field of its own in being used as a vehicle to carry active substances in the form of suppositories to the orifices of the body. It is used also for cosmetic purposes, but seldom in the form of ointments for medicinal purposes.

Glycerin.—Glycerin is used in many combinations which are superior to fats for certain cases, mainly in local conditions, where fats are not desirable, as follows: Glycerite of starch (Glyceritum Amyli) makes a pleasing base for many purposes. It can be perfumed and made into a very elegant pharmaceutical mixture, as shown by the proprietary articles on the market. The popular clay poultices are mixtures of clay and glycerin with aromatics. The formula is given in the U. S. P. under the title Cataplasma Kaolini.

Another combination of glycerin is Gelatinum Glycerinatum, which is intended to be used as a base for making suppositories, but may be used also for ointments.

Soaps.—Soaps are often used as a medium for applying medicinal substances to the skin, but they are generally overrated, the beneficial effect being due to the cleansing action of the soap. A moment's consideration will show that a 5 per cent. phenol soap will yield a very dilute solution if any amount of water is used.

Terpenes.—The essential oils are entirely different from the other oils, being formed by the mixture of certain bases called terpenes. Only fifteen terpenes are known, while the list of essential oils is very large; the oxidation of these terpenes produces such compounds as camphor, menthol, eucalyptol, thymol, etc. These oils and derivatives are mainly used to perfume pharmaceutical mixtures. A very small quantity is sufficient to change an obnoxious-smelling mixture into a very attractive one. The main essential oils may also be used as irritants, antiseptics and anesthetics. The exudations found on trees are usually mixtures of terpenes and a soluble gum. For example, the exudation of the pine tree yields a solid substance called rosin (Resina) and a liquid turpentine (Oleum Terebinthinæ). The oil is rectified for internal administration and called Oleum Terebinthinæ Rectificatum. The term spirit of turpentine should not be used, as now we use the term spirit, to designate an alcoholic solution of a volatile substance, but we should use the proper name: oil of turpentine. Rosin is used on account of its high melting point to harden ointments and cerates. It is present in Ceratum Resinæ, Ceratum Resinæ Compositum and Ceratum Cantharidis. These exudations are the source of many of the balsams which formerly had such a high standing in the treating of all ailments, but now are simply used for the effect that the name produces.

SUMMARY.

Ointments are semi-solid preparations used for the application of medicinal substances to the surface of the body.

For local effect the mineral fats and the glycerin mixtures should be used as a base.

For systemic effect the vegetable and animal fats should be used. Pharmaceutical skill should be used to make them attractive to the sense of smell by the addition of some perfume and attractive to the eye by the use of some attractive coloring matter and the use of the collapsible tube.

Bronchitis.

If the patient is seen early, while the coryza is still present, the attack may often be aborted by administration of Dover's powder at bedtime, in combination with quinin, as follows:

℞. Pulveris ipecacuanhæ et opii	gr. x	65	
Quininæ sulphatis	gr. v	32	

Ft. pulvis. Sig.: One such powder at bedtime.

The patient may also be given a hot bath or a mustard footbath, and a glass of hot lemonade, with or without whisky. A saline laxative should be given the next morning. In the case of children a mild calomel purge may be given, followed by castor oil.

The patient should be kept in a warm, moist atmosphere, preferably indoors, and small doses of quinin should be given for a day or two.

Anders states that if this treatment fails, or if the patient does not come under observation early enough, the main objects of treatment should be: (a) To render the secretions free; (b) to hasten the expulsion of the sputum after it has been loosened. For this he recommends the following formulas:

℞. Potassii citratis	℥vi	24	
Liquoris ammonii acetatis	f℥v	145	
Spiritus ætheris nitrosi	f℥i	30	
Vini ipecacuanhæ	f℥ii	8	
Syrupi pruni virginianæ q. s. ad	f℥viii	240	

M. Sig.: One tablespoonful in water every two hours until the secretions are loosened.

If the temperature is maintained at 102 or 103 F., or over, tincture of aconite min. xxx (2.0) may be added to the above mixture. If a distressing cough with much tickling of the throat be present codein gr. ii-iii (0.12-0.19) may be added.

When the above prescription is not productive of free secretion and troublesome cough continues, Anders employs the following combination:

℞. Ammonii chloridi	℥v	20	
Codeinæ	gr. iv-vi		25-4
Spiritus juniperi comp.	f℥ss	15	
Misturæ glycyrrhizæ comp.	f℥iiss	75	
Syrupi pruni virginianæ q. s. ad	f℥iv	120	

M. Sig.: One teaspoonful every two hours.

Potter, "Materia Medica, Pharmacy and Therapeutics," recommends the following formulas in acute bronchitis:

℞. Antimonii et potassii tartratis	gr. ii		13
Liquoris ammonii acetatis	f℥iv	120	
Spiritus ætheris nitrosi	f℥i	30	
Tincturæ aconiti	f℥ss	15	
Syrupi q. s. ad	f℥vi	180	

M. Sig.: One teaspoonful every two or three hours during the first stage.

℞. Fluidextracti cimicifugæ	f℥ss	15
Tincturæ opii deodorati	f℥i	4
Syrupi tolutani q. s. ad	f℥ii	60

M. Sig.: A teaspoonful every four hours.

℞ Tincturæ sanguinariæ
Tincturæ lobeliæ, āā.....f℥i 4
Vini ipecacuanhæ .....f℥ii 8
Syrupi tolutani q. s. ad.....f℥iv 120
M. Sig.: A teaspoonful every three hours.

For bronchitis in children, Koplik recommends the following simple and practical combination:

℞ Tincturæ opii camphoratæ.....℥i 4
Syrupi ipecacuanhæ.....m. xxx 2
Syrupi tolutani.....f℥ii 60
M. Sig.: One teaspoonful every three hours.

In capillary bronchitis in children Potter recommends the following formulas:

℞ Ammonii iodidi.....gr. ii-iv 4-8
Ammonii carbonatis .....gr. iii-vi 8-12
Syrupi glycyrrhizæ
Syrupi tolutani, āā.....f℥ii 60
M. Sig.: A teaspoonful every two or three hours.

℞ Quininæ sulphatis.....gr. vi 4
Acidi sulphurici dil.....m. xii 7
Syrupi .....f℥ss 15
Aquæ .....f℥iiss 75
M. Sig.: A teaspoonful every two hours to a child of 2 or 3 years; older children require more quinin.

℞ Liquoris ammonii acetatis.....f℥ss 15
Syrupi ipecacuanhæ.....f℥i 4
Morphinæ sulphatis.....gr. 1/12 005
Syrupi acaciæ .....f℥i 30
Aquæ .....f℥iss 45
M. Sig.: A teaspoonful every two hours for a child 2 years old, when the face is pale, expression languid and skin cool.

It must be remembered that expectorants should never be given to infants, as they are unable to cough and may drown in their own secretions; emetics should be prescribed instead. Emetics are necessary when suffocative symptoms become prominent.

Burns and Scalds.

In the *Virginia Medical Semi-Monthly* M. Moran recommends the following for the treatment of burns and scalds:

Phenol (acidi carbolici)..... 1 per cent.
Balsami peruviani..... 5 per cent.
Olei ricini .....94 per cent.

Gauze or cotton is saturated with the mixture and applied to the injured part. The dressing should be renewed daily.

Alcohol in Affections of Ear, Nose and Throat.

W. L. Ballenger, Chicago, states that alcohol is a valuable remedy for topical applications, and is especially useful in a gargle. It is astringent and antiseptic, and when properly diluted is cooling to an inflamed surface. He recommends the following combination:

℞ Alcoholis
Aquæ cinnamomi, āā.....f℥ii 60
Liquoris formaldehydi.....m. ii 12
Glycerini .....f℥v 20
Aquæ dest. q. s. ad.....f℥viii 240
M. Sig.: Use as a gargle.

This formula, Ballenger states, makes a good gargle in acute tonsillar and pharyngeal inflammations and in the soreness following removal of the tonsils. In very young children it may be used in a more diluted form.

In chronic otorrhea this author recommends alcohol in the following dilutions and mixtures:

1. Alcohol 1 part, distilled water 2 parts.
2. Alcohol 1 part, distilled water 1 part.
3. Alcohol 2 parts, distilled water 1 part.
4. Alcohol 3 parts, distilled water 1 part.
5. Alcohol 95 per cent.

These dilutions are used principally in the treatment of chronic suppurative otitis media. The meatus is first filled with the weakest solution, then mopped out, and each solution is applied in series until the patient tolerates the 95 per cent. solution. If the strongest solution is applied at once it causes considerable pain and irritation, whereas, if the strength is gradually increased these unpleasant results are avoided.

Medicolegal

Sale of Medicines by Unlicensed Employés.

The Appellate Term of the Supreme Court of New York holds, in the case of State Board of Pharmacy vs. Matthews, that tincture of arnica, tincture of iodin and spirits of camphor are medicines, within the meaning of a law relative to the sale of medicines. That they were not compounded at the counter, but were labeled, sealed and placed on the counter for immediate sale, it does not consider made any difference. It says that the suggestion that the statute, restricting sales of medicines by unlicensed employés, when literally construed, becomes unreasonable and unconstitutional, fails to recognize the ample power of the legislature to enact police regulations for the health and public welfare of the community, which can be threatened in no more perilous way than by the sale of medicines by inexperienced persons.

Pharmacopeia Purity Required in Sales by Grocers.

The Appellate Term of the Supreme Court of New York says that the defendant in the case of State Board of Pharmacy vs. Gasau, a grocer, sold in the course of trade a certain quantity of cream of tartar, which, instead of being 99 per cent. pure, according to the standard of the Pharmacopeia, contained 74.7 per cent. of cream of tartar and the rest in alum. Subdivision 2 of Section 197 of Article 11 of the Public Health Law of New York provides that "every proprietor of a wholesale and retail drug store, pharmacy, or other place where drugs, medicines or chemicals are sold, shall be held responsible for the quality and strength" of these commodities, with certain specified exceptions. Section 199 of said article provides that this article shall not apply to the sale by merchants of ammonia, bicarbonate of soda, borax, camphor, castor oil, cream of tartar, "except as herein provided." But the court thinks that the intention of the legislature, at the time it enacted the exception contained in Section 199 was obviously merely to except merchants who deal in cream of tartar and certain other persons from the provisions of the article regarding the visitorial duties of the State Board of Pharmacy and the granting of licenses in pharmacy, and not to except them from the general prohibition against adulteration which had not yet been enacted. When this general prohibitory clause was subsequently enacted, it contained no exception which could shelter the defendant; and its unrestricted application was permitted by the express language of Section 199, which was at the same time amended by inserting a qualifying clause that it should operate "except as herein provided." Since the defendant failed to bring himself within Section 199, it followed that he had rendered himself liable for violation of the public health law as a "proprietor of a retail . . . place where . . . chemicals are sold," and consequently the judgment against him must be affirmed.

Pay Recoverable for Caring for Smallpox Patients.

The Supreme Court of Arkansas says, on the appeal of Marion County vs. Bonds and another, where the latter parties sought to recover for waiting on and nursing certain smallpox patients, that the Arkansas statute provides that it shall be lawful for the county to allow accounts incurred by any person in preventing the spread and in nursing and caring for persons in their respective counties who have been afflicted with smallpox. It also provides that "no persons shall be allowed a greater sum for services rendered . . . under the provisions of this act than is customary for such services in other cases." The purpose of the law was to enable county courts to aid in the suppression of smallpox, but at the same time they are prevented by the last clause quoted from making exorbitant allowances for services rendered during the dread and stress of such contagions. They can not allow greater amounts than customary charges for "such services in other cases;" i. e., other cases than smallpox. The trial court correctly declared the law, in declaring as follows: "That the plaintiffs were entitled to the value of their services according to the market value for such labor in other fever cases—that is, according to

the wages paid for labor generally in like services—and declares that $5 a day was reasonable wages for the plaintiffs, and declares that they were entitled, under the evidence, to this sum." The plaintiffs made out their cases by proof that the charges made were reasonable for the service they rendered. The proof that they worked night and day, not only nursing the stricken ones, but doing the household work besides, was sufficient to sustain the trial court's finding. The criterion for determining the proper amount is the value of such services, i. e., the service of nursing the sick, doing household duties, etc., made necessary on account of the disease, if such service or similar service were performed in other cases than smallpox. The lawmakers intended that no unusual and extravagant charge should be allowed on account of the exigencies produced by the dreadful disease. But, in the present cases, even if the amount allowed for nursing, under the proof, would have been unreasonable, the fact that the plaintiffs performed, in addition, customary household duties, made necessary by reason of the contagion, amply sustained the trial court's finding.

Statements Made to Alienist.

The Court of Appeals of New York says that in the homicide case of People vs. Furlong, counsel for the defendant claimed that the homicide was committed while the defendant was under the influence of epileptic furor. A physician of great experience in mental diseases testified that he was informed by some one that the court desired him to make an examination of the defendant, and that the latter was brought to the room where the examination was held, and that he made the examination and questioned the defendant to ascertain the truth in regard to his claim of insanity. The examination was made during one of the adjournments of the court, while the defendant was on trial. It was made without the knowledge or presence of either counsel. Whether due courtesy was shown to the counsel engaged in the trial in holding the examination without notifying them, the court says was a question it was not to pass on. The physician testified that before examining the defendant he had said to him that he thought it was for his interest to answer questions unreservedly and truthfully; that he might decline to answer any question that he might put to him, and that, while he was examining him in the interests of the court and not as either for or against him, anything he said in answer to his questions might be used against him.

The court holds that the statement which was made to the physician was not within the constitutional prohibition against compelling a defendant to give testimony against himself. The statement made by the defendant was properly received in evidence as an admission or for the purpose of showing that the defendant's statements made at different times were contradictory and inconsistent. The evidence was not incompetent because of the fact that the witness was a physician. The authorities cited by the defendant to show that unsworn statements by the defendant as to transactions prior to the time of the trial can not be given in evidence for use on which to base an expert opinion as to the sanity of the defendant at the time of the commission of the crime all relate to testimony in behalf of the defendant. Such testimony if allowed would permit a defendant to prepare his statement to fit his particular case. The reason for excluding testimony so offered in behalf of the defendant does not apply where it is sought to show conversations and statements of a defendant for use on a trial in behalf of the people.

Prescribing Remedies—Use of Hypnotism or Massage.

The Court of General Sessions of Delaware says, in the case of State vs. Lawson, through Chief Justice Lore, charging jury, that the defendant was charged with practicing medicine without a license. Under the statutes of this state it is a misdemeanor for any person to engage in practicing the profession of medicine, within the limits of the state, without first having obtained a license therefor. The persons classed by the statute as physicians are designated as follows: "Every person (except apothecaries) whose business it is for fee and reward to prescribe remedies or perform surgical operations for the cure of any bodily disease or ailing, shall be deemed a physician or dentist as the case may be, within the meaning of this act." Revised Code of 1852, amended in 1893, page 58, chapter 7.

The defendant did not contend that he had a license to practice medicine, but relied on the defense that he treated his patients personally by hypnotism and massage, without prescribing any remedies, and that such treatment is not in violation of the statute. The jury's inquiry, then was: Did the defendant, for fee or reward, prescribe remedies or perform surgical operations for the cure of any bodily disease or ailing?

It is the duty of the court to instruct the jury as to the meaning of the word "prescribe" remedies, used in the statute. In medicine, to "prescribe" remedies is defined to be "to write or give medical directions; to indicate remedies." It is not necessary that such prescription should be in writing. It may be given or indicated verbally. Any direction given to the patient for drugs, medicines, or other remedies, for the cure of bodily diseases, directing how they are to be applied to or used by the patient, is a prescription within the meaning of the statute. It would make no difference whether the direction was given by the person in charge of the patient himself or by another person, even though he be a licensed physician engaged by and under the control and direction of the defendant in that particular. State vs. Paul, 56 Neb. 369; Benham vs. State, 116 Ind. 112; *In re* Bruendlis' Will, 102 Wis. 45; O'Neil vs. State (Tenn.) S. W. 627.

Personal treatment of one person by another by hypnotism or massage alone, unaccompanied by any direction as to the use of drugs, medicines, or other remedies to be used by the patient, would not come within the term "prescribing remedies" used in the statute. When accompanied, however, by such direction as to the use of drugs, medicines, or other remedies by the patient, it would come within the terms of the statute and be in violation thereof. Should the jury, therefore, be satisfied, from the evidence, beyond a reasonable doubt, that the defendant did, for fee and reward, either by himself or by another under his direction, engage in the business of prescribing remedies for curing bodily diseases or ailing, the verdict should be guilty. If not so satisfied, it should be not guilty.

Proper Evidence in "Traumatic Appendicitis" Case.

The Supreme Court of Alabama says, on the appeal of Birmingham Railway, Light & Power Company vs. Moore, a personal injury case brought by the latter party, that the plaintiff contended that in a collision of cars, she received a blow on the lower part of the right side of the abdomen which superinduced "traumatic appendicitis." The evidence without conflict showed that she was a healthy woman up to the time of the collision, had never detected or felt any symptoms of appendicitis up to that time, nor had she received any injury before that time. It further showed that she had pain in the region of the appendix from the time she received the blow in her side, on the 11th of June, up to the 22d day of July, at which time she was operated on in a hospital; the operation demonstrating that she had appendicitis. The experts differed in their opinion as to whether the appendicitis, with which she was affected, was the proximate result of the blow—whether it was "traumatic appendicitis." This made a question for the determination of the jury, which rendered a verdict for the plaintiff.

It being necessary for the plaintiff to offer evidence to show that she incurred liability for medical bills, it was proper to ask her to state what was the amount she paid or was to pay the physicians she testified had rendered her medical services. If it was conceded that only reasonable bills for physicians' services were recoverable, this did not render the evidence sought objectionable; and, if no evidence was offered to show reasonableness of such services, the defendant should have moved the court to exclude the evidence, or should have asked a charge excluding such services as an element of damages.

It was proper to show that all and any means known to medical skill were resorted to, in the proper treatment of the plaintiff, to relieve her without subjecting her to the danger of an operation. The court can not say that remedies which

would allay irritation would not postpone the necessity for operating for appendicitis.

Notwithstanding that the operation performed on the plaintiff was a successful one, it was competent to show the results that followed the operation, and as one of the results that the plaintiff would necessarily have to be careful with respect to her person, and the length of time such care would have to be observed.

Objection was made to the introduction in evidence of a part of a work on "Practice on Surgery," and of another on "Modern Surgery." Each of the books was shown to be a standard medical work. The parts offered in evidence pertained to the pathology of appendicitis, particularly relating to the disputed question of whether or not appendicitis could be caused by a blow or bruise—by traumatism. Under the rule established by this court in 1857 in the case of Stoudenmeier vs. Williamson, 29 Ala. 558, the objections to the introduction of the books were properly overruled.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal.

April 6.

1 *Eructations in Heart Patients. F. Schwyzer, New York.
2 Physical Processes of Immunity and Infection. J. Wright, New York.
3 *Spondylosis Rhizomelia. A. Gordon, Philadelphia.
4 Facilities for Treating Venereal Patients in the Dispensaries and Hospitals of New York. A. D. Mewborn, New York.
5 What Can Treatment Do for the Prophylaxis of Venereal Disease? H. G. Klotz, New York.
6 How Can Prophylaxis by Treatment in Cases of Venereal Disease Best Be Obtained? J. Pedersen, New York.
7 *Present Status of Preliminary Iridectomy as Related to Cataract Extraction. W. Reber, Philadelphia.
8 *Unpublished Observations on Endemic Neuritis. J. M. Wheate, Boise, Idaho.

1. **Eructations in Heart Patients.**—Schwyzer believes that it is chiefly patients with abdominal arteriosclerosis who are troubled with large amounts of gas. He calls the gastric syndrome in abdominal arteriosclerosis an intermittent claudication of the stomach, the only difference being that it does not show its circulatory insufficiency primarily by the feeling of pain, but by a sensation of pressure and by intense and partly futile contractions causing eructations which are followed by total relaxation.

3. **Spondylosis Rhizomelia.**—Gordon reports two cases of this kind. In the first case there was rigidity of the lower part of the spine and a kyphosis at the same level. Symptoms of involvement of the spinal cord and of the roots were very evident. A rheumatic personal or family history was absent. In the second case there were a very marked rigidity of the lower spine and an ankylosis of the large proximal joints of the lower limbs. Pain was present in both extremities and in the back. Cord involvement was evident. There was no rheumatic history. The reflexes in this case were exaggerated, while in the first case they were entirely abolished.

7.—See abstract in The Journal, Oct. 6, 1906, page 1130.

8. **Endemic Neuritis.**—According to Wheate, beriberi is an acute infectious disease, transmitted by direct infection, probably always through a skin abrasion on some vulnerable portion of the body. The specific organism causing the disease is an exceedingly small bacillus, usually seen in pairs, but not encapsulated, which is found in the cerebrospinal fluid and blood only during the acute or inflammatory stage of the disease, after which time it rapidly disappears from these tissues. The favorite habitat is virgin soil protected from sunlight. It is a slightly facultative anaërobe, and not very viable, being speedily killed by exposure to sunlight, as demonstrated by bacteriologic test and by clinical experience. The former classification of the disease as beriberi hydrops and beriberi atrophica is erroneous. There is but one form of beriberi, which is characterized by three stages: 1. The stage of invasion. 2. The stage of exudation, beginning in the cord and following by toxic motor and sensory paralysis of varying extent, which in typical cases proceeds to 3, the stage of compensation, in which the disappearance of the bacilli and the toxic stage results in the rapid (usually) disappearance of the dropsy in cases in which softening and dilatation have not progressed to the degree of permanent loss of compensatory action. The degenerative cord and nerve lesion is long present in all moderately severe cases, resembling the lesion in tabes in this particular, and even though the heart lesion appears to have subsided while the patient is leading the inactive life of a convalescent, the damage to function is permanent. This explains the numerous cases of sudden and unaccountable death in patients leaving hospitals apparently cured, as reported by many observers with extensive hospital experience.

Medical Record, New York.

April 6.

9 *Gastroscopy. C. Jackson, Pittsburg, Pa.
10 *Harmful Involution of the Appendix. R. T. Morris, New York.
11 *Cause and Cure of Cancer. A. C. Jacobson, New York.
12 *Diagnostic and Prognostic Value of Eosinophiles in Circulating Blood. L. Blumgart, New York.
13 *Four Cases of Syphilis Unassociated with Observable Secondary Manifestations. G. M. MacKee, New York.
14 *Early Separation of Jointed Twins (Xiphopagus). C. F. Kieffer, Fort D. A. Russell, Wyo.

9.—Practically the same paper was published in *Annals of Otology, Rhinology and Laryngology* for December 1906.

10. **Harmful Involution of the Appendix.**—Morris draws attention to the fact that the normal involution of the appendix, with replacement of the lymphoid, mucous and submucous coats by connective tissue, may produce unpleasant symptoms for a long period and thus become harmful to the patient. The process is distinctly irritative, not infective. Involution seems to guard the patient against infection. Normal involution of the appendix may begin early in life; but most patients who show its symptoms are over 25 years of age. Symptoms begin gradually; there is autointoxication with its train of symptoms, and there are intestinal dyspepsia, sensation of discomfort in the region of the appendix, an appendix that feels hard and narrow on palpation, and hyperesthesia of the lumbar plexus of the nerves. There is persistent distension of the cecum and colon with gas. Irritation of the nerve filaments is communicated to the intimate ganglia of the bowel walls and causes disturbance at the nearest point of the bowel. The sensation of discomfort in the appendiceal region is not due to distension with gas, but to the direct irritation of nerve filaments.

11. **Cause and Cure of Cancer.**—Jacobson advances a new theory as to the cause of cancer. He says that parasites may be concerned in the causation of cancer by means of local irritation that they produce, but only thus. The carcinomatous growth, he asserts, is a perverted growth, or perverted physiologic growth. At the degenerative period of life, when atrophy of the sexual organs occurs, physiologic energy that is produced in the body finds itself at a loss for an outlet. This energy goes to produce cancerous overgrowths. Peoples with less energy, like the inhabitants of Burmah, Persia and the East, are less apt to have cancer. Coley's results with toxins may depend on the engagement and diversion of this energy. For the etiology of benign growths the author postulates Cohnheim's theory, trauma, or parasites producing the irritation. For the etiology of malignant growths a further source is needed—perverted energy. Spontaneous disappearance of cancer would be due to readjustment of the energy of economy. Young, healthy individuals can not be inoculated because the fundamental factor, perverted energy, is wanting. This accounts for the metamorphoses of benign into malignant growths. Radical extirpation of cancer is not enough, because the perverted energy still exists, causing recurrence. When cancer occurs in the young, it is due to sexual anomalies with maladjustment of energy.

12. **Eosinophiles.**—According to Blumgart, the entire disappearance or very marked diminution of the eosinophiles, together with a distinct leucopenia, goes far to establish the diagnosis of typhoid in doubtful cases. A normal or increased percentage of eosinophiles speaks against typhoid. In cases of undoubted typhoid the presence of eosinophiles, even in small numbers, during the first week is a favorable sign and speaks for a probable mild type. Blumgart urges that no typhoid

patient should be considered cured or dismissed from observation before he has regained permanently at least a normal percentage of the eosinophiles.

13. **Syphilis.**—MacKee advises the exercise of extreme care in making a diagnosis of syphilis in cases unassociated with secondary manifestations before advising the recognized course of constitutional treatment. He says that a careful search for the *Spirocheta pallida* should be made in the primary and secondary lesions of every case, for if this is found it will confirm the diagnosis.

14. **Separation of Jointed Twins.**—Kiefler relates the history of an African, 66 years old, born on board a slave ship, as one of jointed twins. The mother died after a Cesarean section done by the ship surgeon. The surgeon also separated the twins, of whom, the other died. In the scar over the sternum, at the point of separation, began a keloid, which at the age of eight years, had to be removed, and returned, but not to become thick. Later, other keloids formed, of which one of large size is especially mentioned as appearing over the right temple and parietal region; it has been removed, but has returned, and now shows signs of malignant degeneration.

Boston Medical and Surgical Journal.

April 4.

15 *Campaign Against Uncinariasis in Porto Rico. B. K. Ashford, U. S. A., and W. W. King, U. S. P. H. and M.-H. S.
16 *Effect of Industry on Health. W. C. Hanson, Cambridge
17 Treatment of Chronic Urethral Discharge. B. Tenney, Boston.
18 *Crusade Against Tuberculosis in Germany (Continued.) E. A. Locke, Boston.
19 *Unusual Pupillary Phenomena in Hysteria. J. J. Putnam, Boston.
20 *Hysterical Trunk Deformity, Scoliosis. M. Bohm, Boston.
21 *Feigned Eruption in an Hysterical Man. Charles J. White, Boston.

15.—See abstract in THE JOURNAL, March 23, 1907, page 1057.

16. **Effect of Industry on Health.**—Hanson describes the attempt made recently by the State Board of Health of Massachusetts to establish factory inspection work on a scientific basis.

18. **Crusade Against Tuberculosis in Germany.**—This is the second installment of Locke's paper on this subject. In it he discusses the care of the sick as well as the prophylactic measures employed, such as the convalescent camps, farm colonies, sanatoria, the special institutions for the far-advanced cases, the dwelling house reform, the crusade against tuberculosis in children, and tuberculosis in the army and navy.

19. **Pupillary Phenomena in Hysteria.**—In the case reported by Putnam, there was dilatation, with complete immobility of the pupil of one eye, associated with spasm of the ciliary muscle of the other eye, the pupil of which was rather small habitually, but responded to light and with convergence.

20. **Hysterical Trunk Deformity.**—Bohm reports a case of lateral curvature of the spine which resisted all attempts at correction, but disappeared under extension or even in recumbency. There was no rotation present. Bohm is convinced that this is a case of hysterical scoliosis.

21. **Feigned Eruption.**—Following a burn of the right middle finger, White's patient developed a peculiar eruption which involved the back of the right hand and half of the extensor surface of the forearm. There first appeared small red spots which became covered with brown crusts and developed slowly in size until they became as large as a five-cent piece. Some of the lesions were two inches in diameter. The patient was well physically, but was extremely nervous. There were also some lesions on the dorsum of the right foot. Over the whole right half of the body the man was anesthetic, even the bulbar conjunctiva and nostril being insensitive to severe irritation.

St. Louis Medical Review.

March 30.

22 Examination of the Heart. W. H. Broadbent, London, Eng.
23 Some Phases of the Pathology of Cardiovascular System. G. McConnell, St. Louis.

Lancet-Clinic, Cincinnati.

April 6.

24 Semi-Centennial Anniversary of the Academy of Medicine of Cincinnati. N. P. Dandridge, B. P. Goode, C. D. Palmer and S. Nickles, Cincinnati.
25 Diphtheritic and Other Forms of Croup, with Special Reference to Intubation. W. A. Wells, Washington, D. C.
26 Etiology and Treatment of Convergent Strabismus. T. W. Floyd, Peoria, Ill.

American Journal of Medical Sciences, Philadelphia.

March.

27 *Acute Dilatation of Stomach and Its Relation to Mesenteric Obstruction of the Duodenum. L. A. Conner, New York.
28 *Operative Treatment of Fractures, Especially of the Long Bones. J. T. Vaughan, Washington, D. C.
29 *Leukemic Blood Picture in Fracture of the Ankle. C. E. Simon, Baltimore.
30 *The Luys Urine Separator. B. S. Barringer, New York.
31 *Colloidal Nitrogen in the Urine. W. McK. Marriott and C. G. L. Wolf, New York.
32 *Comparative Study of Occult Blood Tests; New Modification of Guaiac Reaction; Its Value in Legal Medicine. D. M. Cowie, Ann Arbor.
33 *Varicose Aneurism of the Aorta and Superior Vena Cava. C. Cary, Buffalo.
34 Nature of General Toxic Reaction Following Exposure to Roentgen Rays. D. L. Edsall and R. Pemberton, Philadelphia.
35 *Hypertrophy of Islands of Langerhans in Diabetes Mellitus. W. G. MacCallum, Baltimore.
36 *Universal Itching Without Skin Lesion; Hematogenous Urobilinuria; Malarial Poisoning; Peculiar Erythrocytolysis. J. K. Mitchell and A. R. Allen, Philadelphia.
37 *Fibroid Tumors of Vulva. E. A. Schumann, Philadelphia.
38 *Treatment of Diffuse Suppurative Peritonitis. J. A. Blake, New York.

27. **Acute Dilatation of Stomach.**—Conner bases his study on 82 recorded cases of acute dilatation of the stomach, 2 personal cases and 18 cases of mesenteric obstruction of the duodenum. He considers acute dilatation of the stomach a disease of considerable clinical importance, one which develops under a variety of conditions, but is especially frequent after operation done under general anesthesia. In the majority of cases reported, there was found an associated dilatation of the duodenum; in fact, in a large proportion of cases, about one-half, the dilatation is associated with and seems to result from some form of obstruction of the duodenum. The most common cause of such obstruction is found to be constriction of the lower end of the duodenum, between the root of the mesentery and the vertebral column. The constriction occurs when the mesenteric root with the superior mesenteric artery, which runs in it, is stretched tightly across the duodenum as the result of traction exerted by the small intestine hanging over the brim of the pelvis. Although great dilatation of the stomach would doubtless increase the liability to mesenteric obstruction by crowding the intestines into the pelvis, Conner is of the opinion that in some cases at least, the duodenal obstruction is primary. The mortality among the reported cases was 72 per cent., but Conner says that there is much evidence to show that the disease can usually be controlled and cured, if the diagnosis is made and suitable treatment begun before complete collapse of the patient has occurred.

28. **Operative Treatment of Fractures.**—Vaughan is of the opinion that perfect adjustment in fractures of the long bones is seldom accomplished without operation, except in greenstick fractures and in some transverse fractures, in which the fragments may be displaced only partially and have not overridden as in some cases of Colle's fracture. He favors wire for holding the fragments together, because it is less bulky, because it can be applied with less injury to the soft parts, and because its action in holding the bones together continues longer than any of the other methods in use, except the bone ferrule. He has operated in 102 cases of fracture with only two fatalities, both occurring after operation on the neck of the femur. The methods employed and the results obtained are presented in full.

29. **Leukemic Blood in Fracture of Ankle.**—In a case of compound fracture of the right ankle, Simon observed a distinct increase in the polynuclear neurophiles, and a blood picture, which was typical of myeloid leukemia. At the time of the examination the patient was suffering from a cellulitis. The leg was amputated in the lower third, and one week afterward, with the recovery of the patient, there was a return to normal conditions.

30. **Luys' Urine Separator.**—Barringer has employed this instrument with much satisfaction in fourteen cases, two male and twelve female. The histories of nine of these cases are published. He says that any inaccuracy of results obtained by the use of the separator is to be attributed to its employ-

ment in unsuitable cases, or to a failure to recognize traumatic hemorrhage when it occurs. He has found the separator invaluable in cases in which one or both ureteral openings are obscured by cystitis; in cases in which the rapid excretion of pus or blood into the bladder clouds the bladder fluid, and in cases in which in a normal bladder one or both ureteral mouths can not be found.

31. **Colloidal Nitrogen in Urine.**—The nitrogen which is precipitated by absolute alcohol has been termed by Salkowski colloidal nitrogen. Marriott and Wolf repeated Salkowski's work with 11 specimens of urine, but do not recommend the method for clinical use. In the mixture precipitated from urine by alcohol, the nitrogenous carbohydrate described by Salkowski was not found. The authors state that the colloidal nitrogen of Salkowski does not bear any relation to the undetermined nitrogen.

32. **Occult Blood Tests.**—Cowie describes his modification of Boas' second modification of Weber's test for occult blood. As small an amount as one milligram of blood is said to produce a distinct reaction with this test. To one gram of stool, softened with water, if necessary, four or five c.c. of glacial acetic acid is added and mixed in a glass mortar. To this mixture, 30 c.c. of ether are added and allowed to extract for several minutes. To one or two c.c. of the extract an equal amount of distilled water is added, and the whole shaken thoroughly. To the resulting mixture, a few granules of powdered, guaiac resin are added, and after this has dissolved there are added 30 drops of old, water-white, chemically pure turpentine. By holding the container against the light, or in front of a white surface, the presence of blood is manifested by a distinct light blue color, which develops quickly in the upper half of the mixture, remains for a short time, and gradually disappears. Larger amounts of blood cause a more intense blue.

Cowie conducted several series of experiments for the purpose of determining whether or not the reactions for occult blood occur in the stools of individuals eating a meat diet. He found that individuals eating an ordinary meat diet seldom give a reaction in the stool with the occult blood tests. If a reaction occurs, it is in all probability due to some pathologic process in the gastrointestinal tract. The reader is referred to the original article for the detailed report of Cowie's experiments.

33. **Varicose Aneurism of Aorta and Superior Vena Cava.**—A case of this kind is reported by Cary. The patient died from rupture of the aorta into the vena cava.

35. **Islands of Langerhans in Diabetes Mellitus.**—MacCallum reports a case of diabetes mellitus that came to the postmortem room. On examination of the pancreas he found alterations in the islands of Langerhans, but felt that these alterations could hardly be interpreted as degenerative changes nor as changes which might bring about functional insufficiency. On the other hand, there were changes which seemed to indicate an actual increase in the bulk and functional capabilities of these islands. The islands were very conspicuous and seemed larger and much more deeply stained than normal. They were far less sharply outlined than normal and appeared to be almost everywhere directly continuous with the cells of the adjacent acini. In another case, to which reference is made, the pancreas presented an appearance almost precisely similar to that seen by MacCallum.

36. **Universal Itching Without Skin Lesion.**—In the case reported by Mitchell and Allen the persistent, universal itching was caused by the presence of urobilin in the circulation, which in its turn was the result of a peculiar hemolysis caused by chronic malarial poisoning. The patient also suffered from Raynaud's disease, probably of the same malarial origin, slight renal irritation and general nervousness. All attempts to relieve the itching were ineffectual until treatment was directed to the improvement of the blood-making function, together with the employment of sweat baths and stimulating douches, and the moderate, long-continued administration of iodids, mercury and arsenic.

37. **Fibroid of Vulva.**—Schumann reports a case of myxomatous fibroma of the left labium majus, occurring in a woman, 45 years of age, and which had existed for eight years. The tumor was extirpated without difficulty, under ether anesthesia. The hemorrhage was slight and easily controlled.

38. **Treatment of Diffuse Suppurative Peritonitis.**—As is known, Blake is an advocate of thorough peritoneal lavage in the treatment of diffuse suppurative peritonitis. He says if one has left nothing in the peritoneum that can be absorbed there is no need of drainage. If something is left which probably will not be absorbed, drainage is indicated, but one should drain only to the doubtful substance. The drain is then a sort of safety valve.

In comparing fatal cases, Blake finds that the employment of drainage apparently has had little influence on the results. Of 78 cases of diffuse peritonitis caused by appendicitis, death occurred in 15; 7 of these were not drained and 8 were drained. Of the patients who recovered, 31 were not drained and 32 were drained. Of 13 patients, with peritonitis caused by perforations or ruptures of the stomach and upper intestines, 4 died; 2 of these were drained and 2 were not drained. Of the 9 patients recovering, 5 were drained and 4 were not drained. Of 8 patients, with perforation of typhoid ulcers, 4 died, of whom 3 were drained, and one was drained through an abscess in the pelvis. Of the 4 patients who recovered, 2 were not drained, and 2 were drained through the pelvis, there being abscesses present. The abdominal wounds were drained in practically all the cases; the statement "not drained" refers to drainage of the peritoneal cavity. Blake believes that his patients have made smoother recoveries by the omission of drainage, but that careful judgment must be exercised in every case, because some cases need drainage and some do not; some patients seem to do better with irrigation, while some get well without irrigation or drainage, and some patients die, whether drained or not, washed or unwashed.

The Post-Graduate.

39 *Jaundice. A. Pisani, New York.
40 Importance of Systematic Education of Hospital and Dispensary Patients Afflicted with Venereal Disease. F. Cabot, New York.
41 *Exophthalmic Goiter. P. Horowitz, New York.
42 1906 Report on Pulmonary Tuberculosis of New York Post-Graduate Medical School and Hospital. W. J. Mersereau, New York.
43 *Nasal and Intranasal Primary Syphilis. A. Fanoni, New York.
44 Two Cases of Gastric Ulcer. A. F. Chace, New York.
45 Presentation of Popliteal Artery Removed from Case of Diabetic Gangrene of the Foot. S. Lloyd, New York.
46 Diagnosis and Treatment of Gastric Ulcer. R. H. Halsey, New York.
47 Surgical Treatment of Gastric Ulcer. F. Torek, New York.

39. **Jaundice.**—Three of the five cases reported by Pisani were examples of intralobular compression jaundice; one was a case of interlobular compression jaundice, while the remaining case was a good illustration of extrahepatic jaundice. In all three classes there was an obstruction, with escape of bile by the natural channels. From a study of these cases Pisani draws the following conclusions: 1. All forms of jaundice are either intralobular, interlobular or extrahepatic. 2. All forms of jaundice are due to obstruction of the biliary passages. 3. The severity of jaundice in the intralobular and interlobular forms varies, depending on the amount of biliary radicles occluded. 4. The differential diagnosis between the intralobular and interlobular forms of jaundice is generally reached after considering the history of the case and the result obtained in its treatment. 5. In the extrahepatic form of jaundice in which the obstruction is due to biliary calculi, it is always advisable to submit the patient to a thorough medical treatment, as explained above, before allowing him to submit to operative interference. 6. If the obstruction does not yield promptly to medical treatment, surgical interference should be instituted at once.

41. **Exophthalmic Goiter.**—Horowitz reviews the clinical history of this condition and reports eight cases, seven in women and one in a man. In several of the cases the high-frequency current was employed with some success.

43. **Nasal and Intranasal Primary Syphilis.**—Fanoni reports in detail the histories of four cases of primary, nasal syphilis. In one case there was a chancrous erosion of the tip of the nose; in another there was a typical chancrous ulcer of the right side of the septum of the nose; a third patient presented

a thickened, dull red, semilunar patch on the left ala nasi, and the fourth patient had a thickened incrustation of the inner aspect of the right ala nasi and of all the septum.

Virginia Medical Semi-Monthly, Richmond.

March 22.

48 Benign Stricture of Rectum. M. E. Nuckols, Richmond.
49 *Treatment of Burns and Scalds. M. Moran, Pinners Point.
50 Case of Uncinariasis. G. Baughman, Richmond.
51 *Treatment of Inoperable Carcinoma. S. H. Graves, Norfolk.
52 *Retropharyngeal Abscess. R. Glasgow, Lexington.
53 Principles of Surgery. S. McGuire, Richmond.

49. **Treatment of Burns and Scalds.**—An abstract of this article appears in the Therapeutic Department of this issue.

51. **Treatment of Inoperable Carcinoma.**—In the treatment of inoperable carcinomas, Graves employs either caustics, Roentgen, violet or radium rays, or serum therapy. He says that the selection of cases for any particular treatment is of great importance, and calls for considerable judgment and discrimination on the part of the operator. He describes his methods in full, and adds that he would not recommend the use of any of these agents in any case in which the patient is in good condition and will submit to an operation.

52. **Retropharyngeal Abscess.**—A case of this kind is reported by Glasgow, who emphasizes the importance of careful diagnosis, digital exploration, and the necessity of prompt surgical intervention, as soon as fluctuation can be detected.

Journal of the Michigan State Medical Society, Detroit.

March.

54 *Chronic Middle-Ear Suppuration and Surgical Interference. E. Amberg, Detroit.
55 Comparison of the Old Time and the Modern Physician. C. L. Girard, Escanaba.
56 Relation Between Anemia and Early Stages of Tuberculosis. B. R. Shurly, Detroit.
57 Hernia. H. A. Haynes, Ionia.
58 Pregnancy: Diagnosis, Hygiene, Delivery and After-Treatment. F. A. Weaver, Charlotte.

54. **Otitis Media.**—According to Amberg, only exceptionally a chronic middle ear suppuration which does not respond to mild treatment without more thorough surgical interference should be allowed to continue. He says that the less radical procedures should first be considered and that the more radical measures should not be delayed too long.

Surgery, Gynecology and Obstetrics, Chicago.

March.

59 *Surgical Treatment of Tuberculosis of the Kidney. H. A. Kelly, Baltimore.
60 *Vaginal Section as an Operation of Choice. H. T. Byford, Chicago.
61 *Tuberculosis of the Kidney. C. P. Noble, Philadelphia.
62 *Hysterectomy and Removal of Body of Uterus. J. W. Bovée, Washington.
63 *Comminuted Fracture of Both Ends of Radius. J. C. Logan, Pittsburg.
64 *Foreign Bodies in the Vagina. N. W. Sharpe, St. Louis.
65 *Occlusion of Femoral Vein. J. G. Sheldon, Kansas City, Mo.
66 Celiac and Mesenteric Plexuses and Their Rôle in Abdominal Shock. L. Buerger, New York City, and J. W. Churchman, Baltimore.
67 *Surgery of Typhoid Perforation. J. W. Long, Greensboro, N. C.
68 *Primary Operations for Obstetric Debility. E. Reynolds, Boston.
69 *Reticulum in Small Round-celled Sarcoma and Lympho-Sarcomata. M. G. Seelig, St. Louis.
70 *Akanthosis Nigricans. W. Meyer, New York City.
71 *Vaginal Cesarean Section. J. F. Moran, Washington, D. C.
72 *Aid to Intestinal Suturing. A. F. Jonas, Omaha.
73 *Technic of Cleft Palate Operation and Removal of Silk Sutures. A. M. Vance, Louisville.
74 Symptoms of Versions and Flexions of Uterus. A. Theilhauber, Munich, Germany.

59, 60, 61.—See abstracts in The Journal, Jan 26, 1907, page 351.

62.—See abstract in The Journal, Jan. 5, 1905, page 72

63. **Comminuted Fracture of Both Ends of Radius.**—In the case reported by Logan, the chief interest centers in the fracture of the head of the radius, although the complication of a Colle's fracture of the same bone makes it of greater rarity. The fracture was the result of a fall down a short flight of steps.

64. **Foreign Body in Vagina.**—Sharpe reports the case of a woman, 75 years old, who wore a pessary for 35 years. During the last 25 years the appliance had not been removed. The pessary was almost completely enveloped. The vagina had become distorted into an hour-glass or funnel shape. The pessary was very much eroded and opposite the urethra there were slight incrustations.

65. **Occlusion of Femoral Vein.**—Sheldon reports a case of sarcoma in the left inguinal region, which extended from a point three inches below Poupart's ligament into the pelvis. It seemed to be intimately associated with the femoral vein. There was considerable edema of the leg from occlusion of the femoral vein by pressure. Sheldon succeeded, however, in dissecting the tumor from the leg without wounding it. No hemorrhage occurred, and six months after the operation there is no evidence of recurrence of the tumor, although the entire leg is considerably larger than its fellow. The man has not been prevented from pursuing his occupation as a farmer.

67. **Surgery of Typhoid Perforation.**—Long presents a brief résumé of the history of this subject and reports two cases. In one case the perforation occurred on the thirtieth day of the disease, and was followed by an extensive peritonitis. An operation was done successfully, but the patient succumbed nine days afterward, from acute dilatation of the stomach. In the second case the perforation occurred through the walls of a Meckel's diverticulum, which sprang from the proximal side of the transverse colon. An operation was done and the patient made a rapid and uninterrupted recovery.

68. **Primary Operations for Obstetric Debility.**—Reynolds discusses the delivery of debilitated women by operative methods, intrapelvic or abdominal, before labor, in the absence of mechanical impediments and as a method of choice.

69. **Small Round-Cell Sarcoma and Lymphosarcoma.**—Seelig has made a careful study of the reticulum of these two varieties of sarcoma, with a view to establishing a basis for differentiation. He found that the quantity of reticulum present varies within such broad limits and with such irregularity that it is impossible to associate definitely either type of tumor with the amount of reticulum it contains. He says that inasmuch as a study of the reticulum in lymphosarcoma and in small round-cell sarcoma of lymph nodes reveals no histologic differences, it is warr nted and expedient to group these two types of lymph node tumors under the one head of malignant lymphomata.

70. **Akanthosis Nigricans.**—This paper is supplemental to one on cancer of the colon read by Meyer before the May (1906) meeting of the American Surgical Association, and abstracted in The Journal, June 30, 1906, page 2016.

71.—See abstract in The Journal, Jan. 26, 1905, page 351.

72. **Aid to Intestinal Suturing.**—The double suspension loop method employed by Jonas is carried out as follows: After the ends of the intestine to be sutured have been smoothly trimmed with scissors, the circumference is divided into three divisions, one of the points of division being at the mesenteric attachment. The intestinal ends are first brought together by a suture at the mesenteric attachments, carefully including the mesentery in the suture; then, at one of three divisions in the intestine, a round, straight, or curved needle, armed with a suture, is passed in and out, including the serous and muscular coats in the bite of the needle, leaving a free margin of one-fourth of an inch for inversion. The needle with the same thread is then passed over to the other intestinal end and is made to pierce serosa and muscularis in the same manner as before. The needle is then removed; that part of the thread which extends between the free intestinal ends is then grasped and pulled, thus forming a loop. By grasping the loop thus formed and catching the free ends of the thread, a double loop is formed. A second thread is passed in the same manner as the first one, forming a second double loop. The threads are now grasped with hemostats, and when pulled taut, the intestinal ends are drawn together closely with a sero-serous inversion. The suturing can now be done quickly and accurately by whichever suture method may be deemed advisable.

73. **Points in Surgical Technic.**—In order to avoid stitch-hole infection in cleft palate operations, Vance uses silkworm gut and a pair of ordinary aspirator needles of small size. Through one, he threads a silkworm gut double, and through the other a single strand is placed. The needle threaded with the double suture is passed first, the loop being pushed through after the needle, and opposite this is placed the needle

with the single thread. The single suture is engaged in the loop and on withdrawing both needles, the loop pulls the single suture through, leaving it in the proper position to be tied. This procedure is repeated until sufficient sutures are in place. A second point mentioned by Vance is the use of a simple little instrument for removing a silk ligature from a pedicle wherever it may be situated.

Buffalo Medical Journal.
March.

75 *Surgical Aspect of Gastric Ulcer. E. A. Smith, Buffalo.
76 The New Pharmacy and the Old. W. B. Birchmore, Brooklyn, N. Y.
77 Nature, the Good Physician. J. D. Macpherson, Akron, Ohio.
78 *Obstruction in the Region of the Pylorus. T. Jameson, Rochester, N. Y.
79 Visions of Mary Czajka. F. E. Fronczak, Buffalo.

75. **Gastric Ulcer.**—Smith says that although operative treatment is indicated for frequent and debilitating hemorrhages, and also for repetition of severe hemorrhage, patients suffering from a single severe hemorrhage are best treated medically. Exploratory operations are recommended in obscure cases presenting gastric dyspeptic symptoms and in which gastric ulcer is suspected. Smith says that certain cases of gastric ulcer are favorable ones in which to do resection of the pylorus with anastamosis between the duodenum and stomach.

78. **Obstruction in Region of Pylorus.**—Jameson reports two cases: in one the obstruction was caused by a large gallstone which was lodged at the junction of the cystic and common ducts, and in the other the fundus of the gall bladder adhered to the greater curvature of the stomach in such a way as to cause a bending and narrowing of the pylorus, when the stomach was distended. In a third case there was stricture of the pylorus and in a fourth case a tumor mass was palpable in the region of the pylorus. This patient refused operation and died from starvation after two weeks.

St. Paul Medical Journal.
March.

80 *Mitral Stenosis Cases. G. G. Sears, Boston.
81 Suppurative Otitis Media. F. E. Burch, St. Paul.
82 Conservative Treatment of Suppurative Otitis Media. A. C. Heath, St. Paul.
83 Surgical Treatment of Suppurative Otitis Media. C. Williams, St. Paul.
84 *Gastric and Pyloric Adhesions. A. W. Abbott, Minneapolis.

80. **Mitral Stenosis.**—Sears' paper is based on a study of 50 cases which came to autopsy. The cardiac lesion was confined in 25 cases to the mitral valve; in seven others the mitral lesion was the chief finding, but was combined in two with chronic fibrous pericarditis and in five with inflammation of the aortic valves. Aortic stenosis complicated nine other cases, aortic insufficiency three, and tricuspid stenosis six. In four of the latter aortic regurgitation was also present and in one case aortic stenosis.

84. **Gastric and Pyloric Adhesions.**—Abbott reports six cases which illustrate the clinical importance of adhesions in the gastric region as a cause of symptoms, the etiology of which is often overlooked. Abbott says that many cases of so-called nervous and hysterical dyspepsia are due to adhesions about the stomach and pylorus, and that in all cases in which an operation is done for ulcer, pyloric obstruction or gall-bladder disease, the operation should be considered incomplete unless a thorough exploration for adhesions has been made and those adhesions corrected, so far as possible.

Interstate Medical Journal, St. Louis.
March.

85 *Hydronephrosis. A. T. Cabot, Boston.
86 Psychotherapy. M. A. Bliss, St. Louis.
87 *Resurrection Days. M. Frank, Chicago.
88 The Roentgen Ray as a Diagnostic Aid. E. H. Skinner, Kansas City, Mo.
89 Surgery Among the Chinese. T. H. Kee, Manila, P. I.

85. **Hydronephrosis.**—Cabot reports four cases of traumatic hydronephrosis and two of true hydronephrosis.

87. **Resurrection Days.**—Frank writes about the days in England and Scotland when the study of anatomy was surrounded by great difficulties because of the scarcity of anatomic material, the bodies being "snatched" usually by professional "body snatchers," most of whom came to grief through the efforts of the law.

Journal of the Arkansas Medical Society, Little Rock.
March 15.

90 Pathology of Carcinoma of the Uterus. N. Klein, Texarkana.
91 Advantages of the Pneumatic Sigmoidoscope Over the Ordinary Proctoscope. W. V. Laws, Hot Springs.
92 Tubal Pregnancies. P. Hunt, Texarkana.
93 *The Physician and Nostrum. E. Bok, Philadelphia.
94 Importance of a Clear Understanding of the Vasomotors and the Utilization of Their Function to Get Best Therapeutic Results. W. C. Abbott, Chicago.
95 Premature Burial. J. J. Johnson, Biggers, Ark.

93.—This article also appeared in THE JOURNAL, Feb. 23, 1907, page 688.

Indiana Medical Journal, Indianapolis.
March.

96 Use of Forceps. L. P. Drayer, Fort Wayne, Ind.
97 Case of Cesarean Section. J. Kolmer, Indianapolis.
98 Poisoning by Illuminating Gas. C. Sudranski, Greencastle, Ind.
99 Surgical Physiology of the Circulation. G. Crile, Cleveland.
100 *Management of Eczema. J. C. Johnston, New York.
101 Cheerful Literature for Convalescents. Mrs. C. Smith, Cincinnati.

100.—This article appeared in the *New York Medical Journal*, Oct. 20, 1906, and was abstracted in THE JOURNAL, Nov. 3, 1906, page 1512.

Medical Sentinel, Portland.
March.

102 Modern View of Neurasthenia and Its Treatment. R. L. Gillespie, Portland.
103 Diagnosis and Treatment of Ulcer of the Stomach. C. E. Sears, Wallace, Idaho.
104 Technic of Abdominal Operations. A. R. Cunningham, Spokane, Wash.
105 Expert Testimony on Insanity. W. Everly, Seattle.
106 Diffuse Septic Peritonitis. T. J. Costello, Lewiston, Idaho.

Western Medical Review, Omaha.
March.

107 Pulmonary Stenosis. H. L. Ewing, Lincoln.
108 Surgery of the Gall Bladder. R. H. Rhoden, Fremont.
109 Duodenal Ulcer, with Report of a Case of Perforation. M. J. Ford, Omaha.
110 Facts of Importance in Behavior of Certain Infections. D. W. Beattie, Neligh.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.
March 23.

1 *Clinical Experience with Spinal Analgesia. A. E. Barker.
2 *Infiltration Anesthesia in Major and Minor Surgery. G. J. Arnold.
3 *Cholelithiasis. E. S. Bishop.
4 *Removal of Enlarged Tonsils. R. Maclaren.
5 *Case of Gastroenterostomy Combined with Gastrostomy, for Ulceration of the Stomach. B. G. A. Moynihan.
6 *Insanity, Its Causes and Increase. G. H. Savage.

1. **Spinal Analgesia.**—After a very careful study of spinal analgesia in 100 cases, Barker gained the impression that there is undoubtedly a place for spinal analgesia in surgery, but only when those who would employ it have studied its theory and practice fully so far as they are known. He says that it is not for casual use by the inexperienced.

2. **Infiltration Anesthesia.**—Arnold believes firmly in the value of infiltration anesthesia for both major and minor operations. His own list of operations include the following: Gastrostomy; herniotomy; suprapubic cystotomy; closure of an artificial anus; laparotomy for intestinal obstruction; radical cure of varicocele; removal of a mass of suppurating tuberculous glands in the groin; extirpation of the saphenous vein and its tributaries for varix. Arnold says that by a combination of regional anesthesia of the great nerve trunks, and local infiltration at the seat of operation, major amputations can be performed without general narcosis.

3. **Cholelithiasis.**—Bishop discusses the history of cholelithiasis. He lays great stress on eliciting pain on pressure over the affected bile channel, as a diagnostic symptom.

4. **Tonsillectomy.**—Maclaren prefers to operate with the patient under the influence of a general anesthetic and in the lateral posture. The tonsil is dissected out carefully, traction being made on the gland with a vulsellum forceps, either with a sharp-pointed scalpel or with blunt dissectors, depending on the firmness of the gland and the degree of its attachment to

the underlying structure. There is said to be only a moderate amount of bleeding, which is controlled easily by finger pressure. The gland when thus removed has never returned. Healing is generally complete in about ten days.

5. **Gastroenterostomy and Gastrostomy.**—The patient, on whom these operations were performed by Moynihan suffered from extensive ulceration of the stomach and consequent stenosis of the pylorus, the result of the accidental swallowing of hydrochloric acid. A posterior gastroenterostomy was performed in the usual manner, the opening in the stomach being made nearer to the cardiac orifice than usual. The gastrostomy opening was made on the anterior surface midway between the curvatures and well toward the cardiac end. A rubber drainage tube was passed through this opening into the stomach and out again through the gastroenterostomy opening into the distal limb of the jejunum. The patient was fed through this tube for 17 days, when food was again given by the mouth. The tube was removed in the fourth week and the patient has made a complete recovery.

6. **Insanity.**—Savage sums up his paper as follows: Heredity has a small share in the causation of general paralysis; it is more frequently seen in relationship with melancholic than maniacal states. This has some connection with the longer life of persons nowadays. They not infrequently show the weight of years in mental depression. Melancholic states are much more likely to recur in families than maniacal disorders; all forms of insanity, especially sensory hallucinations and their resulting delusions with fixed obsessions, are chiefly dependent on hereditary taint; moral imbecility and asocial and criminal tendencies often arise in very neurotic families. Idiocy, mental weakness and eccentricity are common in the children of physically decadent parents. There is no such thing as transmission of any form of insanity direct, but there is a distinct danger of the passing on of a nervous instability which leads to mental disorder resulting from slight or even normal physiologic strain. Insane parents may have sane children. Consanguinity alone does not produce mental disorder. Eccentric and nervous (not insane) parents may give rise to whole families of idiots or defectives.

The Lancet, London.

March 23.

7 *Permanent Defenses of the Body. B. L. Abrahams.
8 *Acute Infective or Toxic Conditions of the Nervous System. E. F. Buzzard.
9 *The Renal Function in Its Relation to Surgery. J. W. T. Walker.
10 *Carcinoma Mammæ in the Mouse. E. F. Bashford and J. A. Murray.
11 Opsonins and Immunity. J. L. Bunch.
12 Rôle of Blood Plasma in Disease. H. Campbell.
13 *Tests for Acetone in the Urine. B. J. F. Jacksontaylor.
14 *Case of Rupture of Very Early Extrauterine Pregnancy, Laparotomy, Recovery. C. A. S. Ridout.
15 *Case of Strangulated Hernia Associated with Acute Hemorrhagic Pancreatitis. W. H. Brown.

7. **Permanent Defenses of the Body.**—Under this heading Abrahams discusses the physiologic reserve or the power which each organ, each tissue, each cell has of calling up its own latent energy in its defense, and the biochemical inter-relation of organs, by which one of them can, by chemical means, evoke in another changes which act in its defense, and the nervous mechanism, by which the main organs can call to their aid, not only each other, but the nervous system as well.

8. **Acute Infective or Toxic Conditions of the Nervous System.**—In this the second of the Goulstonian lectures, Buzzard takes up the consideration of acute poliomyelitis. He believes that the following conclusions concerning this disease are justifiable:

1. It is an acute specific fever occurring sporadically and epidemically, differing from many others but resembling some—variola, for instance—in the facts that its lesions may be discrete or confluent and that its results may be permanent. 2. Its essential lesion is an inflammation of the interstitial tissue of the central nervous system due to the presence of micro-organisms or their toxins probably in the blood (but possibly in the lymph) circulating within that system. 3. The fact that the gray matter suffers more than the white matter is explained by the greater vascularity of the former, and the resistant character of the component parts of the latter. 4. The same morbid process underlies some cases of encephalitis, both of the brain stem and the cerebrum, among which may probably be included many examples of infantile hemiplegia. 5. The bacteriology is at present practically an unknown quantity. Bacteriologic investigation of the blood, as well as of the cerebrospinal fluid, is indicated, and more complete examination of other organs, especially of the intestines.

9. **The Renal Function in Relation to Surgery.**—In his second Hunterian lecture, Walker discusses the methods at the disposal of the surgeon in estimating the function of one kidney.

10. **Carcinoma in Mouse.**—Bashford and Murray describe certain anatomic and pathologic features of sporadic tumors of the mouse.

13. **Test for Acetone in Urine.**—Jacksontaylor believes that the sodium-nitro-prussid test may be rendered more simple, delicate and accurate by substituting strong ammonia for the liquor potassæ and by eliminating the use of acetic acid. The ammonia solution remains on top, and if acetone is present, even in minute quantity, a well-marked and absolutely characteristic ring of magenta or petunia appears at the junction of the two fluids, within from one to three minutes, and gradually spreads upward, pervading the whole of the ammonia solution if acetone is present in considerable amount.

14. **Rupture of Extrauterine Gestation.**—In Ridout's case the rupture occurred at about the fourth week of pregnancy. The embryo occupied a position in the region of the isthmus of the left tube. The signs and symptoms presented by the patient pointed to internal hemorrhage of an extensive character.

15. **Strangulated Hernia and Acute Pancreatitis.**—Brown's patient, aged 60, had enjoyed good health up to the time that symptoms of strangulation of a right inguinal hernia manifested themselves. The herniotomy was done, but did not afford the patient much relief from his symptoms. He died the next day, and at the necropsy the disease of the pancreas was discovered. The symptom from which the patient suffered most was vomiting.

The Clinical Journal, London.

February 27.

16 Fecal Leaks and Fistulæ. C. B. Lockwood.
17 *Asthma in Infants and Children. E. Cautley.
18 *Dysmenorrhea. T. G. Stevens.

March 6.

19 *Psoriasis. H. R. Crocker.
20 *Prevention of Pain After Surgical Operations. J. J. Clarke.

March 13.

21 Treatment of Rickets. G. A. Sutherland.
22 *Surgical Treatment of Ascites. L. A. Bidwell.
23 Real and Apparent Differences in Incidence of Cancer. E. F. Bashford.

March 20.

24 *Present Position of the Radical Operation for Inguinal Hernia. W. M. Eccles.
25 Real and Apparent Differences in Incidence of Cancer. E. F. Bashford.

17.—An abstract of this article will appear in the Therapeutic Department of THE JOURNAL, April 27.

18. **Dysmenorrhea.**—Stevens declares that alcohol should be forbidden and morphin never prescribed for dysmenorrhea. He reviews the treatment usually employed for this condition.

19. **Psoriasis.**—Crocker says that the specifics which experience has shown to be most useful in psoriasis are arsenic, thyroid extract, salicin, and in a few cases, mercurial injections. Locally, tar and chrysarobin may be used. If there is great inflammation, Crocker treats the case as if it were one of eczema.

20. **Prevention of Pain After Operations.**—Clarke says that the three causes of pain after operations are tension, movement and inflammation, and that by adopting procedures which will obviate the occurrence of these conditions, no pain will be felt by the patient after operation.

22. **Surgical Treatment of Ascites.**—Bidwell discusses simple tapping and laparotomy. He advises making the preliminary incision through the skin before introducing the trochar so as not to drive into the abdominal cavity any portion of the epidermis, to avoid passing the trochar through the skin

which is so difficult to sterilize and to insure rapid union of the wound. The edges of the wound are approximated with a horse hair or silkworm gut suture, and then a dressing is applied and fixed with collodion. In this way prompt healing of the wound is secured.

24. **Radical Operation for Inguinal Hernia.**—Eccles says that the radical operation for inguinal hernia is now well established, has a very low death rate, is very highly successful, and renders a large number of members of the community fit to take their place without the inconvenience and danger of a hernial protrusion.

Medical Press and Circular, London.

February 27.

26 Treatment of Concomitant Convergent Strabismus. J. B. Story.
27 Gynecology of To-day and Fifty Years Ago. W. D. Spanton.
28 *Membranous Dysmenorrhea. S. J. Aarons.
29 Large Fibromyoma of Uterus. J. H. Dauber.

March 6.

30 *Empyema of the Maxillary Antrum. P. Dempsey.
31 Psycho-rhythm and Recurrent Psychoses. (To be continued.) T. B. Hyslop.
32 The Poor-law Medical Service in Ireland. T. Donnelly.
33 Case of Fatal Extravasation of Urine from Ureter, Caused by Ulceration Due to Minute Calculus. R. Johnson.

March 13.

34 *Pneumococcal Infections Requiring Surgical Treatment. E. W. S. Carmichael.
35 *Therapeutic Notes. W. Carter.
36 Points in Treatment of Enlarged Prostate. L. G. Gunn.
37 Psycho-rhythm and Recurrent Psychoses. T. B. Hyslop.
38 Case of Renal Calculus Simulating Appendicitis. S. J. Ross.

March 20.

39 *Diabetes. T. K. Monro.
40 *Syphilis Simulating Typhoid. J. D. Rolleston.
41 Prognosis and Treatment of Lobar Pneumonia. J. O. Affleck.

28. **Membranous Dysmenorrhea.**—Aarons reports four cases of membranous dysmenorrhea with the passage of a cast from the uterus.

30. **Empyema of Maxillary Antrum.**—Dempsey's method of treatment is based on that advocated by Bonninghaus. It is described in full.

34. **Pneumococcal Infections Requiring Surgical Treatment.**—Carmichael discusses the pneumococcal infections of the serous and synovial membranes and of tendons.

35. **Therapeutic Notes.**—Carter discusses briefly the use of trypsin in the treatment of cancer; the use of oil of turpentine in a case of rapidly recurring hemorrhagic effusion into the left pleural cavity; the use of Warburg's tincture (tinctura antiperiodica, N. F.) in the treatment of cases of malarial fever that resist quinin, and the use of strychnin and arsenic in the treatment of chorea.

39. **Diabetes.**—Monro discusses the clinical history of diabetes and sounds a note of warning in reference to the use of the so-called diabetic bread which, he says, is not always reliable because too often it is loaded with starch. He advises applying the iodin test to make sure that the bread is sufficiently free from starch.

40. **Syphilis Simulating Typhoid.**—Rolleston reports two cases of syphilis that simulated typhoid fever. Typhoid was excluded by a persistently negative Widal reaction.

Annals of Tropical Medicine and Parasitology.

February 1.

42 Insects and Other Arthropoda Collected in the Congo Free State. R. Newstead, J. E. Dutton and J. L. Todd.
43 Description of Two Species of African Ticks. G. Neumann.
44 Parasites in the Museum of the School of Tropical Medicine, Liverpool. A. Looss.
45 Presence of Spirochæta duttoni in the Ova of Ornithodoros moubata. R. M. Carter.
46 Therapeutics of Trypanosomiasis. B. Moore, M. Nierenstein and J. L. Todd.

Annales de l'Institut Pasteur, Paris.

Last indexed, page 1219.

49 (XXI, No. 2, pp. 81-160.) *Campaign Against Malaria in Algeria. (Algérie—1906.) E. Sergent.
50 *Experimental Hypersensitiveness and Anti-hypersensitiveness to Horse Serum. (Anaphylaxie et anti-anaphylaxie.) A. Besredka and E. Steinhardt. Id. (Phénomène d'Arthus.) Nicolle.
51 *Syphilitic Antibodies in Cerebrospinal Fluid in General Paralysis (Anticorps syph.) A. Marie and C. Levaditi.
52 Inefficacy of Radium in Treatment of Rabies. (Rage et radium.) A. Calabrese.

49. **Campaign Against Malaria in Algeria.**—Sergent divided the country into zones and has applied prophylactic measures in one zone after another as they were reached in turn in the course of five years. Comparison of the results in a protected zone and in the unprotected adjacent zone has provided a most striking example of the benefits of the prophylactic measures. The weeds were mown once a month, the suspicious pools of water were petrolized, and oil was sprayed with a garden pump into the recesses of the barns and outhouses, followed by spraying with twice the amount of water, to kill the adult mosquitoes. The houses were all screened, and adults took 20 c.c. of quinin one day with 40 c.c. the next. Illustrated circulars were distributed, containing advice for protection against malaria, and placards with the same were posted in all the cars, depots, postoffices and other gathering places. Large colored posters were placed in the schools, city halls and depots. The picture postal card was also pressed into service to extend the knowledge in regard to transmission of malaria by mosquitoes and the new prophylactic measures based thereon. The conditions in the different zones are tabulated for comparison, the tables giving the "reservoir for the virus" in the inhabitants with enlarged spleens, and stating the possible breeding points for the mosquitoes in the ponds, etc.

50. **Experimental Hypersensitiveness to Horse Serum: Anaphylaxis.**—Besredka and Steinhardt have been studying the liability to severe and even fatal symptoms noticed when guinea-pigs, which have served for dosage of antidiphtheria serum, are injected with horse serum from 10 to 12 days later. Control animals are not affected. The same injection of horse serum, made before the end of the 10 or 12 days, seems to be harmless for the animal. More than this, it seems to induce the protection of antibodies, which have the effect of vaccinating the animal. The anti-anaphylactic action seems to follow very closely the injection of the horse serum; even a single intraperitoneal injection of 5 c.c. of horse serum was able to confer immediate immunity, allowing the animal to bear without injury an injection of 0.25 c.c. of horse serum directly into the brain in less than two hours afterward. This immediate immunity conferred on the brain, in less than two hours after intraperitoneal injection, is regarded by the writers as absolutely unprecedented in science. The organs of the animals in which this anti-anaphylaxis had been induced did not display any specific properties when tested later. It seems probable that the sensitized guinea-pig, after having served for the dosage of diphtheria serum, although it appears healthy, yet in reality has some latent lesion in the brain. Direct injection of the horse serum into the brain arouses this latent lesion to fatal activity. Nicolle reports research on the same subject, especially that phase known as the "phenomenon of Arthus." His conclusions are that it is due to the production of a special and specific antibody in response to repeated injection of horse serum.

51. **Hemolytic Test in General Paralysis.**—Marie and Levaditi have been experimenting with the hemolytic test, based on the absence of hemolysis in a sample of blood when the serum to be tested has been added to the fluid. In examination of the cerebrospinal fluid of 17 patients without general paralysis, the hemolytic test was invariably negative, while it was positive in 73 per cent. of 39 patients with various phases of general paralysis, and was constant in the more advanced cases. In nine cases of tabes or tabo-paralysis the proportion was only 66 per cent. Their experiences demonstrated further that syphilis alone, or a brain lesion alone, is not able to induce positive findings. Positive results are observed only when there are syphilitic lesions affecting both cortex and membranes, and when these lesions are in an advanced stage. Whether the antibodies in the fluid, causing the positive response to the test, are really syphilitic antibodies or not can not be decided at present. Experiments on apes are now under way in an endeavor to solve this problem.

Bulletin de l'Académie de Médecine, Paris.

53 (LXXI, No. 9, pp. 313-338.) Optometric Scale to Exclude Simulation. (Echelle optométrique polyoptotypique.) Armaignac.
54 *Experiences with Sleeping Sickness. (Maladie du sommeil.) Thiroux and Anfreville. Id. L. Martin.
55 (Nos. 10-11, pp. 339-374.) *Decortication of Lung for Empyema. (Décortication du poumon par la méthode de Delorme.) L. Picqué and Delorme.

54. **Experiences with Sleeping Sickness.**—Thiroux and Anfreville report seven cases of sleeping sickness among the natives of Senegal. The cases were all imported, the disease not being endemic in this French colony. Martin reports five cases of the disease treated at the Paris Pasteur Institute in white men returning from a sojourn in Africa. Laveran presented their communications and discussed their conclusions, giving also a historical sketch of the various methods of treating sleeping sickness to date. Some of these patients were practically moribund when first seen, but the others are apparently cured. The medication was mostly with arsenic, alone or with strychnin, or a combination of a stain—trypan red—and arsenious acid. The native patient cured is a lad about 13, and Laveran suggests that the disease may be more easily cured in the young than in adults. Four of the white patients have practically recovered, but symptoms recurred and the trypanosomes were found again in the blood whenever the treatment was suspended for any length of time; and there is still auto-agglutination of the red corpuscles. Martin gives the arsenic every fifth day at first and then every eighth day, keeping it up for months.

55. **Decortication of the Lung for Chronic Empyema.**—Picqué reports a case of persisting empyema after an extensive stab wound in which three operations with resection of ribs and the Estlander operation had failed to relieve. He then performed the operation advocated by Delorme, which he calls decortication of the lung. Marked improvement followed at once, and in three weeks exercises to strengthen the lung function were commenced. The Roentgen rays reveal the dilatability of the lung and also the thickness and the resistance of the encapsulating membrane. A pleuro-pulmonary process induces the formation of a more adherent membrane than a pleural process alone. The best results are attained with chronic purulent streptococcus and staphylococcus pleurisies. Delorme does not advise decortication of the lung except when the lung remains immovable in spite of respiratory exercises commenced soon after the empyema is incised, especially when the suppurating cavity extends for 6 cm., that is, when the surface of the lung is from 6 to 8 cm. below the wall of the thorax. He cuts a flap including the third and sixth ribs, on the anterior lateral wall of the thorax, the base above at the back. Turning back this flap, he makes the toilet of the pleural cavity and the surface of the lung, and then incises the encapsulating shell that imprisons the lung, taking care not to injure the parenchyma. After mobilizing this shell, he excises it as completely as possible, and the lung at once expands and even protrudes through the opening in the wall of the thorax. The article is illustrated.

Archiv f. klinische Chirurgie, Berlin.

Last indexed, page 459.

56 (LXXX, No. 4, Pp. 843-1031.) Operative Treatment of Fractures. (Op. Behandlung von Fract.) E. Ranzi.
57 *Pathology and Treatment of Benign Bladder Tumors. (Gutartige Harnblasengeschwülste.) M. Weinrich.
58 Typical Fracture of Radius. (Fract. des Radius.) K. Poulsen.
59 *Physio-pathologic Study of Induced Hyperemia. (Venöse Hyperämie.) E. Homberger.
60 *Ligation of Thyroid Arteries for Goiter. (Unterbindung der Schilddrüsenarterien beim Kropfe.) B. P. Enochin.
61 *Method of Anastomosis in Gastrointestinal Tract. (Neue Methode zur Herstellung von Anastomosen am Magendarmtrakte.) J. M. Flint.
62 Experiences with Resection of Tumors in Cecum and Colon at One Sitting. (Einzeitige Res. von Coecal- und Colontumoren.) J. Bakes.
63 *Surgical Treatment of Non-cancerous Gastric Affections. (Nicht krebsige Magenleiden.) Gelpke.
64 *Transplantation of Thyroid Tissue into the Spleen. (Transpl. von Schilddrüsengewebe in die Milz.) E. Payr.

57. **Treatment of Benign Growths in the Bladder.**—Weinrich describes three cases which he thinks illustrate the great value and the good results of Nitze's intravesical technic in treatment of papillomata of the bladder. One patient was a physician, and he returned three years after the first operation to have it repeated on account of return of the growths. He has since been permanently cured. The first patient has been cured for 10 years to date.

59. **Theoretical Study of Bier's Induced Hyperemia.**—Homberger concludes his article with the statement that with an inflammatory focus, outside of the part that is bright red from the influx of arterial blood, and inside of the region beyond, which is bluish from venous congestion, there is always a zone in which there is hyperemia, and in which oxidating processes are going on with great energy. The blood is unusually rich in carbonic acid, but the waste is rapidly deported, thus ensuring increased warmth. This venous hyperemia ensures increased oxidation, and this is what is accomplished by Bier with his constricting band. This method does not detract in any way from the value of the old, tried methods of application of cold to inflammation. After the first contraction under the influence of the ice bag, the vessels become widely dilated, including the veins. The cold transforms the arterial hyperemia—in which the oxygen is swept along too rapidly to be utilized—into a venous hyperemia. The latter does not differ in any pathologic-anatomic respect from that induced by Bier's constricting band.

60. **Ligation of Thyroid Arteries for Goiter.**—Enochin gives an illustrated description of six patients with large vascular goiters improved by ligation of the thyroid arteries. This procedure is indicated only in this class of goiter, but it is followed by a progressive reduction in the size of the goiter and subsidence of the subjective disturbances. In some cases the general nutrition is much improved, but the cosmetic result is comparatively slight. In ligating the inferior thyroid artery, he includes the artery and its encircling connective tissue in the ligature, according to Drobnik's technic. A double ligature is not indispensable. A drain between the carotid artery and the spine is liable to cause injury to the vessels.

61. **New Method of Anastomosis.**—Flint has devised a cutting instrument with which he claims it is possible to unite any two hollow organs without soiling the field of operation with the contents of either. It consists of scissors, one blade 16 cm. and the other 25 cm. long, both tapering to a needle point. The walls of the organ to be anastomosed are sutured together. The blades of the scissors are then run through the walls, parallel to the row of sutures, a short distance above them. A second row of sutures is then taken beyond the place where the scissors are run through the walls. After these sutures are drawn up and tied, the walls between the two rows of sutures are cut through with the scissors, bringing the two blades together, and then pulling out the scissors entirely. No opening is thus made into either organ until after the two have been firmly united both above and below the opening. He says that in gastroenterostomy and enteroanastomosis on 24 dogs the method has proved its great simplicity, rapidity of execution and the rapid healing of the wound by primary intention. The operation was also done on the intestine of the cadaver, after filling the intestine with water; not a drop of water escaped during the operation. The communication issues from Paltauf's Institute for General and Experimental Pathology at Vienna.

63. **Surgical Treatment of Non-Cancerous Stomach Affections.**—Gelpke discusses plastic operations on the pylorus and fixation of the stomach, and asks if they should not be preferred to gastroenterostomy in non-cancerous cases, and if this combination does not deserve wider application. His results with five patients thus treated have been most excellent. One patient was a woman of 53 who had suffered for years from gastric disturbances. The stomach was much enlarged, reaching to the symphysis. A plastic operation on the pylorus plus gastropexy banished all disturbances; and the patient gained 30 pounds in weight and has had no further symptoms during the two years since. In the case of a man of 58 with extreme dilatation of the stomach from cicatricial stenosis, a similar operation restored approximately normal conditions. A woman of 40 with extreme gastroptosis and incoercible vomiting has been free from symptoms since the operation was performed, as also a fifth patient, a x-para, with ulcer symptoms for 22 years. In two other cases a simple plastic operation on the pylorus cured all the disturbances resulting from cicatricial stenosis of the pylorus. In two other cases gastroptosis was treated by fixation of the stomach, and the results have been permanent for several years to date. The simple operation of gastropexy, he thinks, is indicated as much as nephropexy for wandering

kidney, and is less difficult and dangerous than the latter. He had to perform a laparotomy two years afterward on one of his patients for another cause, and found the stomach still solidly fastened in the region of the costal arch. He fastens the middle of the anterior stomach wall, parallel to the greater curvature, to the lower costal arch, passing the needle around the cartilage, or else to the anterior abdominal wall at this level. If convenient, he brings the thread through the entire abdominal wall, using strong silk and taking firm hold. He works through a median incision as the pylorus may require a plastic operation at the same time.

64. **Transplantation of Thyroid Tissue into the Spleen.**—The picture of an apparently normal little girl accompanies Payr's communication, showing the unmistakable improvement in the child with severe infantile myxedema, whom he treated by implantation of thyroid tissue in the spleen. The operation was done in December, 1905, and his report was mentioned in THE JOURNAL, Feb. 2, 1907, page 460. The hair, nails, manner of holding the head and tongue no longer differ from that observed in normal children, and the child has grown 12 cm. in less than nine months, with corresponding improvement in intelligence. The thyroid implanted was taken from the mother.

Centralblatt f. Chirurgie, Leipsic.

Last indexed, page 740.

65 (XXXIV, No. 1, pp. 1-32.) *Simplification of Total Resection of Ribs for Empyema. (Total resektion des Brustkorbes.) C. Bayer.
66 Apparatus for Cupping Treatment. (Therapie mittels negativen Luftdruckes nach Bier-Klapp.) O. Salkindsohn.
67 New Esophagoscope. (Oesophagoskopie.) T. Kölliker.
68 (No. 2, pp. 33-64.) *Special Syndrome of Streptococcus Appendicitis. (Zur App.-Frage.) E. Haim.
69 *Illumination of Operating Rooms. (Beleuchtung, etc.) L. Heidenhain.
70 *Mishap from Spinal Anesthesia. (Folgeerscheinung nach Lumbalanästhesie.) E. E. Goldmann.
71 (No. 3, pp. 65-88.) Tennis Elbow. (Tennis-Ellbogen.) G. Preiser.
72 (No. 4, pp. 89-112.) Cause of Post-operative Pneumonia. (Entstehungsursache postop. Pneumonien.) G. Engelhardt.
73 Suprahyoid Pharyngotomy. (Pharyngotomia.) J. K. Spisharny.
74 (No 5, pp. 113-144.) Plastic Operations on Peritoneum with Isolated Pieces of Omentum. (Peritonealplastik.) S. S. Girgolaff.
75 Latent Changes in Appendix Under the So-called Medical Cures. (Latente Veränderungen des Wurmfortsatzes.) P. Fiori.
76 (No. 6, pp. 145-176.) *Operative Treatment of Muscular Wry-neck. (Muskulär Schiefhals.) Gerdes.

65. **Simplified Operation for Old Chronic Empyema.**—Bayer describes a technic which answers the same purpose as Schede's resection of the thorax wall, while it is much less serious, as the soft parts are all retained. A vertical incision is made about two fingers' breadths back of the anterior axillary line. It crosses all the ribs at the anterior origin of the serratus magnus, commencing at the third rib and extending to the ninth and tenth. This incision does not injure any large blood vessel or involve any large muscle. Through this incision the ribs are subperiosteally resected for about 2 cm. The entire wall of the thorax is opened with the thermocautery, in the zone thus left without ribs, and, after inspecting the cavity, the ribs were resected to right and left as required. It is astonishing, he says, how easy it is to shell out the ribs under these conditions, resecting them for as long stretches as deemed desirable, with the greatest ease. The operation is further facilitated by a supplementary incision parallel with the lowest rib, the first, perpendicular incision crossing it in the middle. If the wall of the thorax is very rigid it may be necessary to scrape the costal pleura and to make a few cross cuts. Only in case of a tuberculous process does he think it necessary to sacrifice the wall of soft parts. He gives illustrations of two patients operated on by this technic. The wall of the thorax does not sink in so far as by the Schede technic, while the scars are much less prominent. The retention of all the soft parts reduces the resulting disfigurement to almost nothing.

68. **Importance of Bacteriology of Appendicitis.**—Haim thinks that important data can be learned from bacteriology which will serve as guides in treatment. If the observations of others confirm his own experience, it will be found that appendicitis due to the streptococcus occurs in an epidemic form in spring and fall, while it is seldom observed at other seasons. It affects the young especially, and prognosis is good for them, but the rare cases of streptococcus appendicitis in the elderly almost invariably terminate fatally. Streptococcus appendicitis requires immediate intervention, while the comparatively milder colon bacillus appendicitis may heal without intervention. It is possible that the varying statistics of different writers on apppendicitis are due to the varying bacteriology of their cases. Haim asserts that in the Scandinavian countries the colon bacillus and the pneumococcus seem to be the general causal agents, while in Italy and England the colon bacillus alone is incriminated. In Germany, France and possibly also in America, the streptococcus and the colon bacillus are the germs at work. He has noticed certain symptoms as especially frequent in certain streptococcus epidemics of appendicitis, such as herpes or icterus, and thinks that by collecting sufficient data it may be possible to differentiate the severe from the mild cases by the specific symptoms observed and the bacteriologic findings.

69. **Illumination of Model Operating Room at Worms.**—Heidenhain has four large 1-ampere electric lights suspended from the ceiling to form a rectangle about nine feet above the floor. The operating table stands in the square formed by the lights, and is thus illuminated from all sides. The shadow cast by one lamp is illuminated by the light from the other three lamps. The walls and ceiling are of white tiles, but a dado of dark blue tiles runs around the room to rest the eyes. Krönig insists that with white walls and electric light the eyes must have some place where they can rest and as a protection against being dazzled. The light of a powerful arc lamp outside the operating room enters through an opening in the wall and is focused on a mirror, from which it can be reflected into the abdomen or other body cavity by adjusting the mirror.

70. **Severe After-Effects of Spinal Anesthesia.**—Goldmann relates the history of a man of 52 who was operated on under chloroform and morphin for hernia. The operation was tedious, lasting fully two hours, but the patient soon recovered. Two months later he returned for herniotomy on the other side, an insignificant operation for a small, reducible hernia. This time the operation was done under spinal anesthesia. The anesthesia persisted for five hours and was followed by severe pains in the feet and calves, back, arms and neck, being most severe in the heels. Large doses of morphin were required to relieve the patient. The pains continued for two weeks. The second day after the operation the heels showed symptoms of gangrene, and the skin of the heel became mummified down to the fascia. The patch of gangrene on each heel was about the size of the palm of a hand, and Goldmann ascribes it to a trophic disturbance, the result of the spinal anesthesia. The patches finally healed, but the patient still complains of diffuse pains, especially headache, but without objective findings, and he presents the aspect of neurasthenia.

76. **Operative Treatment of Muscular Torticollis.**—Gerdes states that he has obtained most excellent results in 11 cases of wry-neck in which he divided the scalenus anticus. This is a comparatively simple operation, while the results are fully as good as with more complicated technics, and it insures against recurrence better than mere tenotomy. When abnormally shortened the scalenus anticus causes curvature of the vertebræ in the neck. He was unable to find any record of treatment of wry-neck by division of this muscle, but he has found that the deformity is corrected when this muscle is severed. He has thus operated on 11 patients since 1897, with excellent and permanent results. He makes a transverse incision, about 5 or 6 cm. long, a finger's breadth above the clavicle, beginning over the tendon of the sternal portion. Both tendons are then divided near their origin, and also the fascia of the neck until the jugular vein is completely exposed. Then the posterior belly of the omo-hyoid muscle is drawn upward and outward, and the jugular vein is drawn inward. This exposes the scaleni and the phrenic nerve is seen, a white cord running across the scalenus anticus, with the brachial plexus over the scalenus medius. The scalenus

anticus is then isolated with a blunt instrument, care being taken to avoid injury to the phrenic nerve, the plexus and the jugular vein; the scalenus anticus is divided over the subclavian artery which lies beneath it. It is easily severed and a distinct snap can be heard. In the depth of the wound the transverse process of the seventh cervical vertebra can be felt. Any existing tendency to cervical scoliosis is at once corrected by the operation. It is not necessary to divide the scalenus medius. He tampons the small incision for forty-eight hours, and after the fourth day commences active and passive exercises, continuing them as required for three or six weeks. He does not approve of supporting apparatus, but trusts exclusively to the early exercises. As division of the scalenus protects better against recurrence than mere tenotomy, while the scar is no more prominent, he advises this technic in all cases of wry-neck, even the milder forms.

Centralblatt f. Gynäkologie, Leipsic.

Last indexed, page 911.

77 (XXXI, No. 3, pp. 65-96.) *Experimental Study of Remote Results of Spinal Anesthesia. (Spätfolgen der Lumbalanästhesie.) A. Falkner.
78 *Three Female Monsters Born to Same Parents. (Reihe missbildeter Mädchen.) E. Schirmer.
79 Locking Device for Forceps. (Zangenschloss.) O. Rapin.
80 Care of Abdominal Walls During Pregnancy and After Childbirth. (Pflege der Bauchdecken.) W. N. Clemm.
81 (No. 4, pp. 97-128.) Spontaneous Expulsion of Entire Muscular Wall of Cancerous Uterus After Cauterization with Zinc Chlorid. (Spontane Ausstossung, etc.) A. Blau.
82 Malformation of Genitalia complicated by Myoma. (Missbildung der Geschlechtstelle mit Myombildung kompliziert.) A. Czyzewicz.
83 Eclampsia without Convulsions. (Eklampsie ohne Krämpfe.) Schlutius.
84 Pregnancy and Normal Childbirth After Operative Treatment of Chronic Inversion of the Uterus. (Op. geheilter chron. Uterusinversion.) Born.
85 (No. 5, pp. 129-168.) Disturbances in the Separation of the Decidual Layer at the Point of Reflection, and Their Relations to Abortion, Placenta circumvallata and Exchorionic Development of the Fetus. (Störungen der Deciduaspaltung am Reflex-Basalliswinkel, etc.) P. Kroemer.
86 *Method and Technic of Pubiotomy. (Technik der Hebotomie.) L. Seeligmann.
87 Instrumental Dilatation in 3 Cases of Placenta Prævia. (Die Methode Bossi.) E. Guasoni.
88 Retention of Membranes; Treatment. (Eihautretention.) Bollenhagen.
89 (No. 6, pp. 169-200.) *Ventrofixation. (Ventrifixur.) W. Liepmann.
90 *Osteomalacia and Suprarenals. (Nebennieren und Osteomalakie.) L. M. Bossi. First part in No. 3.
91 Pregnancy After Steam Cauterization. (Gravidität nach Atmokausis.) P. Meyer.
92 Technic of Steam Cauterization. (Technik der Atmokausis.) L. Pincus.
93 Treatment of Asphyxia Neonatorum with Infusion of Oxygen. (Sauerstoff-Infusionen.) L. Seitz.

77. Experimental Study of After-Effects of Spinal Anesthesia.—Falkner writes from Chrobak's clinic at Vienna to relate the negative results of a series of researches undertaken on rabbits to determine whether intraspinal injection of an anesthetic, according to the usual technic for spinal anesthesia, would have any permanent effect on the elements of the central nervous system. He reviews the various mishaps that have been reported as occurring in the clinic, but he was unable to detect any changes in the nervous system in the animals for which the anesthetic could have been responsible.

78. Series of Female Monsters from Same Parents.—Schirmer relates the history of a healthy married couple, with healthy antecedents, who had 8 children. The first three were boys, all robust children; then followed a girl with half of the head wanting, then a robust boy, then another girl with the same deformity, then a strong, healthy boy. These seven children were born in the course of fourteen years. An interval of seven years then elapsed, and a third girl was born, presenting the same deformity as the others. He thinks that this remarkable series of female monsters confirms the assumption that the sex of the embryo is determined in the ovum, and that each sex has its own separate place of development, possibly one ovary for the males and the other for the females. The maternal organism was evidently alone responsible for the monstrosities. In a second case described, an viii-para was delivered of triplets, one small but healthy boy and two girls, both with one-half of the head wanting. There was thus a female hemicephalus in five pregnancies of two apparently normal woman, mother of a number of healthy sons.

86. Technic of Pubiotomy.—Seeligmann urges all who have any experience with pelvis-enlarging operations to send him a brief report of each case, to collect material for a decisive judgment in regard to the merits of the different technics. Address Dr. Ludwig Seeligmann, Hamburg, Germany. The Bumm method seems simplest, but Seeligmann's experience has convinced him that his own technic is the safest. The Bumm technic, he says, has already a record of 5 per cent. mortality for the mothers and 5 per cent. for the children, not to mention minor mishaps.

89. Ventrofixation.—Liepmann gives an illustrated description of Bumm's method of fastening the uterus to the anterior abdominal wall. Instead of fastening the round ligaments close together, the stitches are taken some distance each side of the incision, and the loop of round ligament is drawn out through a small slit in the peritoneum on each side. By this modification of the original technic the traction of the stitch on each side pulls the top of the fundus of the uterus flat. The fixation is to the submuscular layer of connective tissue, the silk threads being tied over the fascia. The uterus retains approximately normal movability, and the position of the organ and the adnexa is approximately normal.

90. Osteomalacia and the Suprarenals.—Bossi here relates the later history of the woman with osteomalacia who improved to such a remarkable extent under suprarenal extract, as mentioned in THE JOURNAL, March 2, 1907, page 817. She was safely delivered of large twins and is now in the best of health, nursing her children. He says that this is almost incredible when he reflects on the serious condition of the woman when first seen, only 23 days before the delivery, when the softened and yielding bones and intense pains suggested imminent danger of their breaking under the stress of the increasing size of the uterus. The favorable outcome he ascribes exclusively to the suprarenal treatment. Another patient with osteomalacia, the pelvis much deformed and yielding to the encroaching uterus in the sixth month of pregnancy, has since been under observation. The woman was scarcely able to stand and could walk only when supported by two persons. The slightest movement, even in bed, caused her intense pain. The pelvis was so deformed from the osteomalacia that the two spinous processes of the ilium were scarcely more than an inch apart. Improvement was manifest almost from the first injection of suprarenal extract, and at date of writing, 12 days later, the patient is entirely free from pain and can walk with merely the help of a cane. Bossi further reports that he removed the right suprarenal gland from a gravid sheep. The animal showed no special disturbances for a week, when it was noticed that it could not step about with the same freedom as before, and in a few hours this interference with the animal's movements became marked. The next day the joints throughout the body showed deformity, the hip bones were evidently twisted inward and were painful on pressure. It now seems to be impossible for the animal to stand up or to walk. Bossi adds that he does not wish to be premature in his judgment, but that this experience certainly denotes some connection between the removal of the suprarenal and the development of the osteomalacia.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

94 (XXXIII, No. 9, pp. 329-368.) *Human Cells as Parasites. (Menschliche Zellen als Parasiten.) H. Ribbert.
95 *Pathology of the Heart Beat. (Herzschlag.) M. Bönniger.
96 *Prognosis of Pulmonary Tuberculosis. (Lungentub.) E. Rumpf.
97 *New Staining Technic for differentiation of Human and Bovine Tubercle Bacilli. (Neue Färbemethoden.) C. Spengler.
98 *New Researches on Dysentery. (Ruhr.) Kruse.
99 Progress in Spectacles. (Brillengläser.) E. H. Oppenheimer.
100 An Improvised Stand for Roentgen Tube. (Feld-R.-Tisch nebst Stativ.) Gillet.
101 (No. 10, pp. 369-408.) Treatment of Tuberculous Hip-Joint Disease. (Tub. Coxitis.) A. Hoffa.
102 Madelung's Deformity of the Hand. (Mad.'sche Deformität.) Pels-Leusden.
103 Two Cases of Experimental Infection of Cattle with Human Tuberculous Material. (Uebertragung auf das Rind.) A. Eber. Id. A. Weber.
104 Defective Perception of Musical Sounds. (Diplakusis.) A. Barth.
105 White Precipitate of Mercury in Salve Form. (Hydrarg. præcipitatum album pultiforme.) H. Vörner.
106 Recent Patents of Interest to Physicians. (Erfindungen, etc.) G. Justi.

94. **Human Cells as Parasites.**—Ribbert presents new arguments to sustain his well-known views in regard to the genesis of tumors. He believes that tumors are the proliferation of cells which have lost their connection with the organism as a whole and live on it as parasites. He asserts further that myelogenic leukemia has a similar origin, being nothing but the result of parasitic proliferation of marrow cells which have lost their connection with the bone marrow as a whole. Lymphatic leukemia is the same kind of proliferation in cells of lymphatic organs living on as parasites. Cancer research should aim, he says, to determine what processes of growth gradually separate the cells from the rest of the organism and start them on their parasitic existence.

95. **Pathology of the Heart Rhythm.**—Bönniger describes a number of cases, with tracings, which he classes in a special group for which digitalis must be avoided, as it would only aggravate the condition. The principal feature of the cases is the auriculo-ventricular extra systole, which is shown instructively by the Roentgen rays. Other symptoms are extreme irregularity and systolic venous pulse, but the liver does not pulsate. The functional disturbance may be very slight and there are no serious signs of stasis and none of the other signs of tricuspid insufficiency. Systolic active pulsation of the right auricle can be seen with the fluoroscope while the unfavorable influence of digitalis is soon manifest. In a typical case of this kind, a woman of 46, suffering from severe nephritis, presented an irregular pulse with systolic venous pulse, but no symptoms of tricuspid insufficiency. The heart beat was regular but very slow (32), and unmistakably originated in the auriculo-ventricular fibers. The bradycardia became transformed later into tachycardia. The venous pulse was then presystolic and very weak. The importance of this simultaneous contraction of the auricle and ventricle is not so much from the standpoint of function, as this may be only slightly impaired, but from the standpoint of therapeutics, as digitalis only aggravates the irregularity and tachycardia. In about 60 cases of venous pulse of which he has the tracings fully a third belong in this group. The tracings closely resemble those of tricuspid insufficiency, but the conditions of the dilatation of the auricle are exactly the reverse from tricuspid insufficiency. The enlargement of the auricle is not due to regurgitation of blood, but the pulsation is an active contraction of the part. He reproduces a number of tracings and compares them with those of Mackenzie.

96. **Prognosis of Tuberculosis of the Lungs.**—Rumpf regards the predisposition or habitus as less important for the prognosis than others assume—other things being equal. More important is the fact of the patient's being a poor eater or having a tendency to catarrhal affections. If these tendencies can be overcome, the outlook seems to be as good for the "predisposed" as for the others. The years between 16 and 30 give the largest proportion of restoration of earning capacity. He percusses with the patient breathing through the mouth and bids him cough while examining each part of the area separately. The character of the râles is particularly important, and whether they are diffuse or limited to a circumscribed area. In his experience, râles vanished in 308 patients under treatment, and 89.6 per cent. of these retained their earning faculty into the fourth year afterward. In 356 others, râles could still be distinguished, but they were comparatively slight, and the earning capacity was retained into the fourth year in 89.6 per cent., while in 326 others with metallic râles on dismissal, only 12.9 per cent. retained their earning capacity into the fourth year, and 75.8 per cent. had died. When the pulse is persistently fast, and especially when also small, the prognosis should be guarded, as also in cases with unstable pulse and temperature, fluctuating after physical or emotional stress. There is hope that the temperature may return permanently to normal so long as the weight increases or even remains stationary. Climatic factors have been shown to be less important than formerly assumed by the results published from sanatoria in northern countries, Holland, Denmark, and elsewhere, which compare favorably with those from the most famous sanatoria, summer or winter. In no other affection does the prognosis depend so much on the character of the patient and his cooperation as in tuberculosis. A much better outcome can be counted on in a sanatorium than when the patient remains in his usual environment, and Rumpf even goes farther than this and separates the sexes, receiving in his pay pavilion only women patients. He has been much pleased with the improvement that has followed this discrimination, and thinks that it has materially bettered the prognosis for his patients.

97. **Differentiating Staining Technic for Tubercle Bacilli.**—Spengler has found both human and bovine tubercle bacilli in 60 per cent. of all his phthisical patients. When this symbiosis is observed the tuberculosis seems to run a more chronic course, while infection with either of the species alone is of a more rapid, progressive type, and such patients nearly always have more or less fever. In order to differentiate the bacilli more readily he has devised three new staining technics which he describes as adapted for practical clinical use as well as for the bacteriologist. With the first, the "Hüllenmethode," the bovine tubercle bacillus shows up gigantic besides the human tubercle bacillus, with other differences. The second technic, the "Pikrinmethode," shows and differentiates the bacilli well even when their envelopes have been partly destroyed. The third technic, the "Farbächtmethoden," has particular advantages for all the acid-proof bacilli. These technics succeed, he asserts, when all others fail.

98. **New Researches on Dysentery.**—Kruse brings out among other points that hemorrhagic and diphtheric catarrh of the large intestine can occur solely from toxic influences. Certain conditions may favor the development of virulence in ordinary saprophytes, and autoinfection can then result, as in pneumonia. The germs thus rendered virulent may infect other individuals and induce typical dysentery in them. Jensen was able to induce dysentery in new-born calves by feeding them with boiled milk or giving a small amount of creolin or pyoktanin. The findings in the resulting dysentery were exactly the same as in dysentery under natural conditions. Kruse emphasizes the fact that autoinfection and transmissibility are thus not incompatible. He relates extensive studies on immunization and announces favorable results with an antidysentery serum which unites bactericidal, opsonic and antitoxic properties.

106. **New Patents.**—An illustration is given of a little device to put on the finger which automatically holds and compresses the stomach tube so that it can be readily inserted with the finger. Another illustration shows a rest cure shelter that always turns its back to the wind. The rear wall of the littie garden house is made of glass to admit the sunshine while keeping out the wind. The whole is built on a kind of turntable, and is connected with a large weather vane. As the weather vane shifts with a change in the wind, the garden house turns with it, always presenting its solid rear wall to the wind.

Therapie der Gegenwart, Berlin.

107 (XLVII, No. 12, pp. 529-576.) •Anomalies in Thorax Favoring Healing of Tuberculous Lesions. (Disposition bei der Lungentub.) M. Westenhoeffer.
108 •Principles for Treatment of Appendicitis During Pregnancy. (Soll man vor der App.-Op. die Schwangerschaft beendigen oder nicht?) O. O. Fellner.
109 Present Status of Treatment of Pulmonary Phthisis with Induced Pneumothorax. (Lungenphthise und künstlicher Pneumothorax.) F. Klemperer.
110 Treatment of Nervous Children in Sanatorium Schools. (Schul-Sanatorien.) G. Flatau.
111 •Neurasthenia as Symptom of Latent Tuberculosis. (Neurasthenie und latente Tub.) Weinberg.

107. **Anomalies in the Thorax Favoring Healing of Tuberculous Lesions in the Lungs.**—Westenhoeffer reports the postmortem findings in two cases of pulmonary tuberculosis in which the lesions had been arrested and were retrogressing under the influence of compression of the lung from complicating pyopneumothorax in one case and under the influence of passive hyperemia, resulting from a valvular affection, in the other. The conditions in the first case resembled those artificially produced by pneumothorax induced as a means of curing a tuberculous pulmonary affection. In the second case

the conditions resembled those induced by Bier's technic of induced hyperemia. In both cases the spontaneous tendency toward healing occurred as the result of resting the parts, just as a tuberculous affection of the kidneys is benefited by change to a dry, hot climate where the skin perspires so freely that the kidneys are relieved of a large part of their work and are able to heal during this comparative rest. Comparing the two methods of artificial pneumothorax and artificial passive hyperemia, he says that the former accomplishes its purpose of causing the collapse of the lung much more effectually than any other technic yet tried. The valvular affection in his second case had existed for six years, and yet the lesion had not retrogressed to such an extent as in the other case in which the primary lesion had been much more extensive. He concludes from these findings that passive hyperemia is not able to check effectually the development of tuberculous lesions if other unfavorable factors work against it. This assumption is confirmed by a third case in which a primary tuberculous affection developed in the peritoneum notwithstanding existing cirrhosis of the liver. A healthy peritoneum has great resisting powers, but when injured it yields before the mildest invasion. The congestion in the region, resulting from the liver affection, evidently afforded a predisposition to tuberculosis in this case. This was manifest also in another case in which the functions of one lung were impeded by adhesions, the tuberculous lesions in this part being much more severe than in the free parts of the lung. In conclusion, Westenhoeffer declares that hindrance in the performance of its function favors the development of a tuberculous affection in an organ, while complete suspension of function favors a cure.

108. **Appendicitis During Pregnancy.**—Fellner advocates operating in appendicitis entirely regardless of an existing pregnancy. If the child is dead or if there are appreciable signs of labor, the laparotomy should be preceded by the evacuation of the uterus. If the uterine peritoneum is sound, vaginal Cesarean section may be ventured, otherwise delivery induced by another route is preferable.

111. **Neurasthenia as Sign of Latent Tuberculosis.**—Weinberg states that it has been a frequent experience in his practice to find that patients exhibiting symptoms of neurasthenia, but without an apparent trace of tuberculosis, developed tuberculosis after a few years. He warns that patients with neurasthenia should be regarded as suspicious of tuberculosis, especially if the complexion is particularly pink and white, or grayish or yellowish, or if the patients are very thin. Systematic recording of the temperature or the tuberculin test may reveal the tuberculosis underlying the supposed idiopathic neurasthenia in many cases.

Nordiskt medicinskt Arkiv, Stockholm.

Last indexed XLVII, page 1864.

112 (XXXIX, Internal Medicine, No. 3.) *Autopsies at Copenhagen. (Sektionen am Kommunehospital.) V. Scheel.

113 *Comparative Study of Local Action of Anesthetics. (Lokalwirkung von Cocain und Stovain.) C. G. Santesson.

112. **Autopsies at Copenhagen Hospital and Thymic Death.**—A number of the more interesting cases are illustrated, among them one of intense lymphosarcomatosis of the stomach and adjoining intestine, and another of senile atrophy of the liver with torsion of the gall bladder. A typical specimen of "icing liver" is also shown. In three instances the death of a child could not be explained except by the hyperplasia of the thymus. One was a healthy boy of nearly 11, found dead in bed in the morning, with no signs of a struggle, apparently sleeping quietly. The thymus measured 2x7x8 cm. and weighed 40 gm. Scheel paid particular attention to the size of the thymus in other cadavers to establish the normal size for the various decades in life. In 27 children under six months the thymus ranged in weight from 1.2 to 19 gm.; in 34 children between six months to a year old, the thymus ranged from 1.75 to 21 gm.; in 17 between 5 and 10, the thymus weighed from 1.5 to 23.3 gm.; in 11 between 10 and 20, from 3 to 21 gm. In 64 persons between 20 and 60, the thymus weighed from 1.6 to 46.8 gm., the average being about 11 gm., and in 35 persons between 60 and 80, the thymus ranged in weight from 1.1 to 38.4 gm., with an average of about 11 gm. The thymus may induce death by compression on the trachea or on the heart and main arteries, and also by paralysis of the heart by toxic or reflex action. In examining 36 cadavers of persons who had died of delirium tremens, fatty degeneration of the liver and chronic leptomeningitis were the only findings noted with any constancy. Arteriosclerosis was less prevalent than in corresponding groups of non-alcoholics of the same age.

113. **Local Action of Anesthetics.**—Santesson's experiments on frogs and rabbits have demonstrated to his satisfaction that cocain—and still more, stovain—affect the neurilemma and change it in a specific manner. The myelin and also the neurokeratin are more or less altered, and in some of the nerve fibers were found altogether destroyed. His experiments were made with scraps of nerve just taken from the living animal. His findings indicate a special affinity between the poisons and certain elements of the neurilemma. This affinity favors the penetration of the drug through the protecting sheath to the conducting elements of the nerve.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

A SYSTEM OF MEDICINE by Many Writers. Edited by Thomas Clifford Allbutt, M.A., M.D., LL.D., Regius Professor of Physic in the University of Cambridge and Humphry Davy Rolleston, M.A., M.D., F.R.C.P., Physician to St. George's Hospital. Volume II. Part I. Infective Diseases and Intoxications. Part II. Tropical Diseases and Animal Parasites. Cloth. Pp. About 1,050 each. Price, $5.00 per volume. New York and London: Macmillan Co., 1906.

ROENTGEN RAYS IN MEDICAL WORK. By David Walsh, M.D., Ed., Senior Physician, Western Skin Hospital, London, W. Part I. The Electrical Apparatus, by H. L. Jones, M.D., Cantab., F.R.C.P., Lond., Medical Officer in Charge of Electrical Department of St. Bartholomew's Hospital. Part II. Medical and Surgical, by the Author. Fourth Edition. Cloth. Pp. 433. Price, $4.00 net. New York: William Wood & Co., 1907.

MANUAL OF OBSTETRICS. By A. F. A. King, A.M., M.D., LL.D., Professor of Obstetrics in the Medical Department of the George Washington University, Washington. Tenth Edition Revised and Enlarged. With 301 Illustrations in Text and Three Plates. Cloth. Pp. 688. Price, $2.75 net. Philadelphia and New York: Lea Bros. & Co., 1907.

ESSENTIALS OF CHEMISTRY AND TOXICOLOGY, for the Use of Students in Medicine. By R. A. Witthaus, A.M., M.D., Professor of Physics, Chemistry and Toxicology in Cornell University. Thirteenth Edition. Revised by R. J. E. Scott, M.A., B.C.L., M.D. Cloth. Pp. 306. Price, $1.00. New York: William Wood & Co., 1907.

SURGICAL DISEASES OF THE CHEST. By Carl Beck, M.D., Professor of Surgery in the New York Postgraduate Medical School and Hospital. With 16 colored and 162 Other Illustrations. Cloth. Pp. 368. Price, $5.00 net. Philadelphia: P. Blakiston's Son & Co., 1907.

DIAGNOSTICS OF DISEASES OF CHILDREN. By Le Grand Kerr, M.D., Professor of Diseases of Children in the Brooklyn Postgraduate Medical School. Fully Illustrated. Cloth. Pp. 542. Price, $5.00 net. Philadelphia and London: W. B. Saunders Company, 1907.

TREATMENT OF DISEASE. A Manual of Practical Medicine. By Reynold Webb Wilcox, M.A., M.D., LL.D., Professor of Medicine at the New York Postgraduate Medical School and Hospital. Cloth. Pp. 911. Price, $6.00. Philadelphia: P. Blakiston's Son & Co.

TRANSACTIONS of the Western Surgical and Gynecological Association. Sixteenth Annual Meeting, held at Salt Lake City, Aug. 30, 1906. Cloth. Pp. 324. Minneapolis: Press of the *Journal-Lancet*, 1907.

ANNUAL REPORT of Vassar Brothers Hospital, Poughkeepsie, N. Y. Founded by Matthew Vassar, Jr., and J. G. Vassar. Incorporated June, 1882. Paper. Pp 24. Poughkeepsie: A. V. Haight Co., 1907.

TENTH ANNUAL REPORT of the Trustees of the Massachusetts State Sanatorium at Rutland. Nov. 30, 1906. Paper. Pp. 29. Boston: Wright & Potter Printing Co., 1907.

ZWILLINGSSCHWANGERSCHAFT mit heterotopem Sitz der Früchte. Von. Fr. von Neugebauer, Warsaw. Paper. Pp. 165. Price, 6 mk. Leipsic: Verlag von Dr. Werner Klinkhardt.

NINETEENTH REPORT of the State Board of Health of New Hampshire. For the Two Years Ending Nov. 1, 1906. Cloth. Pp. 319. Concord: Rumford Printing Co.

EIGHTH BIENNIAL REPORT of Colorado State Board of Health, Jan. 1, 1905, to Dec. 31, 1906. Cloth. Pp. 115. Denver: Smith-Brooks Press, 1906.

TRANSACTIONS of the American Climatological Association for the Year 1906. Volume xxii. Cloth. Pp. 303. Philadelphia.

ANNUAL REPORT OF ST. JOSEPH'S GERMAN HOSPITAL, of Baltimore, for the Year 1906. Paper. Pp. 33.